



LEEWARD ISLANDS.

Annual Report

OF THE

Departments of Agriculture

AND

Veterinary Services

FOR THE

Year 1950.



ANTIGUA.

Printed at the Government Printing Office, Leeward Islands,
by E. M. BLACKMAN, Government Printer.—By Authority.
1952.

PART I.

LEEWARD ISLANDS.

Annual Report

OF THE

Departments of Agriculture

AND

Veterinary Services

FOR THE

Year 1950.

CONTENTS.

PART I.

Annual Report of the Director of Agriculture for 1950.

Paragraph

FOREWORD	...	...	1
REVIEW OF AGRICULTURAL PRODUCTION	...	...	2
Weather	...	...	2. 1
Sugar	...	...	2. 2
Cotton	...	...	2. 3
Limes	...	...	2. 4
Coconuts	...	...	2. 5
Tomatoes	...	...	2. 6
Ground Provisions	...	...	2. 7
Other Fruits and Vegetables	...	...	2. 8
Livestock	...	...	2. 9
Fish	...	...	2. 10
AGRICULTURAL STATIONS AND EXPERIMENTS	...	...	3
Central Experiment Station, Antigua	...	...	3. 1
Agricultural Station, Bayfords, St. Kitts	...	...	3. 2
Tortola Agricultural Station	...	...	3. 3
The Grove Botanic Station, Montserrat	...	...	3. 4
Sugar Cane Experiments on Estates	...	...	3. 5
Cotton Experiments	...	...	3. 6
Brades Stud and Investigation Centre	...	...	3. 7
EXTENSION AND DEVELOPMENT WORK	...	...	4
Course on Animal Husbandry	...	...	4. 1
Land Settlement and Development	...	...	4. 2
Credit Facilities	...	...	4. 3
Soil, Water and Forest Conservation	...	...	4. 4
Marketing and Processing	...	...	4. 5
Planting Material	...	...	4. 6
Stud Services	...	...	4. 7
Shows	...	...	4. 8
Rehabilitation of Estate Agriculture	...	...	4. 9
DEVELOPMENT AND WELFARE SCHEMES	...	...	5
Federal	...	...	5. 1
Presidential	...	...	5. 2
LEGISLATION	...	...	6

PART II.

ANNUAL REPORT OF THE CHIEF VETERINARY OFFICER FOR 1950.

PART III.

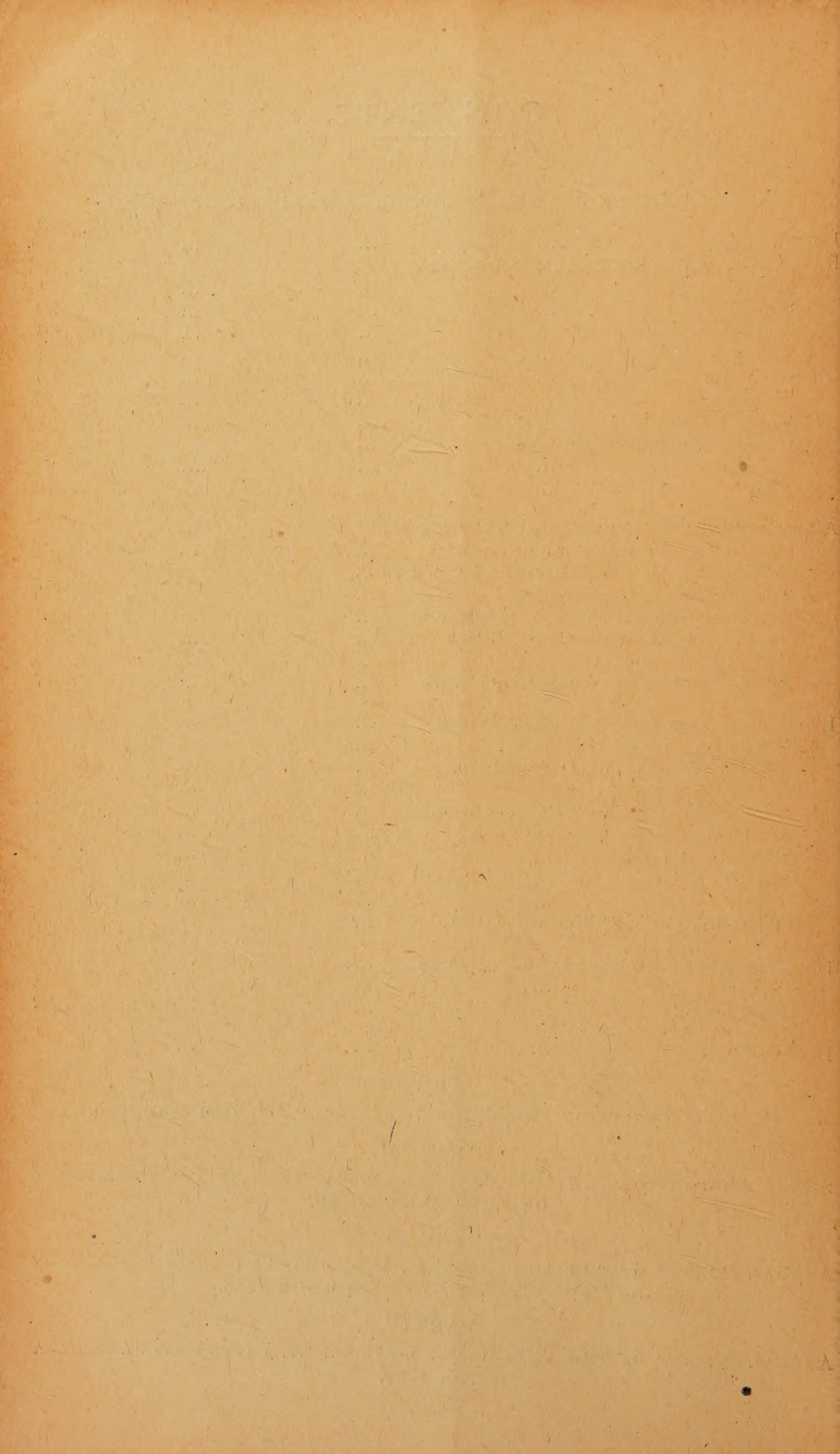
ANNUAL REPORT OF THE AGRICULTURAL DEPARTMENT OF THE PRESIDENCY OF ANTIGUA FOR 1950.

PART IV.

ANNUAL REPORT OF THE AGRICULTURAL DEPARTMENT OF THE PRESIDENCY OF ST KITTS-NEVIS-ANGUILLA FOR 1950.

PART V.

ANNUAL REPORT OF THE VETERINARY OFFICER, ST. KITTS-NEVIS-ANGUILLA FOR 1950.



Report of the Director of Agriculture.

1. FOREWORD.

The annual reports of the Agricultural Departments of the Presidencies of Antigua and St. Kitts-Nevis-Anguilla are published *in extenso* as Part II of this volume. Therefore only their main features are summarized in the Director's Report. The annual reports from Montserrat and the Virgin Islands are not being printed but the information contained in them is fairly fully summarized below.

2. REVIEW OF AGRICULTURAL PRODUCTION.

2. 1. WEATHER. In most areas, rainfall was above average and fairly well distributed. Statistics are recorded in appendices. A tropical disturbance of moderate intensity was experienced in Antigua on 20th August, 1950. On 31st August—1st September, a full hurricane struck Antigua, Barbuda and Anguilla, causing heavy losses to crops, stock and buildings. Minor damage was suffered in the other Islands. Otherwise, weather conditions were, generally speaking, favourable.

2. 2. SUGAR. In Antigua, the sugar crop at 30,681 tons of 96° grey crystals and 422 tons of centrifugal muscovado was the largest for many years in spite of delay in reaping which resulted in some cane being left unharvested. The St. Kitts crop exceeded the previous record by almost 4,000 tons of sugar; the total production was 41,205 tons of which about 1,420 tons were derived from cane grown in Nevis. The total production of cane in Nevis was approximately 13,120 tons, which is more than double the average for the last ten years. Approximately 120 acres of cane were reaped in Montserrat and 90 acres in the Virgin Islands. In these two Presidencies, the cane was used direct for the manufacture of rum, the estimated production being 19,000 gallons in Montserrat and 9,000 gallons in the Virgin Islands. In Montserrat, an additional 3,920 gallons of rum were manufactured from imported molasses. In Antigua, 81,480 gallons of rum were manufactured.

TABLE I.
Statistics of Sugar Production.

Item.	Unit.	Antigua.		St. Kitts.	
		1950.	1940/49 Average.	1950.	1940/49 Average.
Area reaped ...	acres	11,800	10,111	11,330	9,756
Yield of cane ...	tons/ac.	21.3	15.14	29.54	26.94
Price of cane to con- tractors ...	\$/ton	9.982	—	9.897	—
Sugar produced ...	tons	31,103	19,270	39,786	32,888
Yield of sugar ...	tons/ac.	2.64	1.91	3.56	3.33
Cane per ton of 96° sugar ...	tons	8.07	7.87	8.41	8.00
Exports of sugar ...	tons	27,672	17,532	38,646	30,982
Value of sugar and Molasses exported ...	£	760,192	297,352	1,143,445	565,377

The variety B37161 occupied 94% of the acreage harvested in St. Kitts. In Antigua, the dominant varieties were B37161 (46%) and B4098 (35%). The hurricane damaged many fields of plant canes by snapping off the stems below the growing point; B4098 suffered more severely than other varieties.

2. 3. COTTON. In Antigua, there was a 10% increase in cotton acreage, but elsewhere there were declines. The largest drop (over 50%) was in Nevis—a reaction from a very bad season in the previous year; in St. Kitts, dry weather at planting time caused a 30% fall; in Montserrat, the decline was slight. Very satisfactory yields were obtained in Antigua, but in all the other Islands returns were below average. There was a marked improvement in the Pink Boll Worm position in Nevis but some deterioration in St. Kitts. No cotton was planted in the Virgin Islands.

The distribution of cotton acreage in Montserrat is shown in Table II.

TABLE II.

Montserrat Cotton Acreages.

Year.	Peasants on rented or freehold land.	Share cropping.	Estate cultivation.	Total.
1950 ...	1,869	635	1,072	3,576
Average 1940/49...	1,100	1,612	1,044	3,756

TABLE III.

Statistics of Sea Island Cotton Production.

Island.	Acres 1950.	Production of lint in lb.			Yield per acre of clean lint in lb.	
		Clean.	Stained.	Total.	1950.	Average 1940/49.
Antigua ...	3,949	776,153	64,125	840,278	197	148
St. Kitts ...	830	106,786	32,328	139,114	129	173
Nevis ...	1,414	126,576	28,917	155,493	90	107
Anguilla ...	69	3,884	226	4,110	65	70
Montserrat ...	3,576	358,580	41,611	400,191	100	164
Total ...	9,838	1,371,979	167,207	1,539,186	—	—

All clean lint was bought by the Raw Cotton Commission at prices agreed in advance of planting, viz:—

TABLE IV.

Lint Prices in pence per lb. f.o.b. 1950.

Grade.		1	2X.	2	3X.	3	4X.	4 and below.
Antigua and Nevis	...	42	41½	41	40½	40	39½	39
St. Kitts	...	46	45½	45	44½	44	43½	43
Montserrat	...	46½	46	45½	45	44½	44	43½

The overall average prices per lb. of clean lint actually realised were:—Antigua 40½d.; St. Kitts 44½d.; Nevis 40¾d.; Montserrat 44¾d. Stained lint was sold in various markets at about 30—36 cents per lb.

The detailed classification of the Montserrat crop is shown in Table V.

TABLE V.

Classification of Montserrat Cotton Crop: 1950.

Grade.		1	2X.	2	3X.	3	4X.	4 and below.	Total.
No. of bales	...	14	41	193	105	376	57	187	973

TABLE VI.

Price of Seed Cotton to the Grower (cents per lb.)

		Antigua.	Nevis.	Montserrat.
Clean	...	22.7	24	23
Stained	...	3	10.5	4

N.B. In St. Kitts all cotton is disposed of as lint and seed, not as seed cotton.

2. 4. LIMES. The Montserrat lime crop was below average. Replanting of fields affected by dieback continues.

TABLE VII.

Lime Products: Montserrat.

Year.		Green limes.	Raw lime juice.	Ecueled oil.	Distilled oil.	Total calculated as limes.*
		<i>Barrels.</i>	<i>Gallons.</i>	<i>lb.</i>	<i>lb.</i>	<i>Barrels.</i>
1950	...	9	25,560	432	198	4,011
Average 1940/49...		95	42,559	743	356	6,812

*Conversion factors: 7½ gallons juice=1 barrel of limes.
 ¾lb. distilled oil=1 barrel limes.

2. 5. COCONUTS. About 17 tons of copra were exported from Nevis. The British Virgin Islands exported about 41,000 whole nuts

2. 6. TOMATOES. There was a 10% increase in the exports of tomatoes from Montserrat. Shipments totalled 272,793 lb., Canada taking 201,660 lb., and Bermuda and other West Indian Islands the remainder. The price to the grower was about 3.75 cents per lb.

2. 7. GROUND PROVISIONS. The supply of ground provisions was about normal. A guaranteed price of \$4.00 per 100 lb. of maize on the cob was offered by Government in St. Kitts and Nevis but did not prove sufficiently attractive to bring about much increase in production. The pigeon pea crop in Anguilla, where it is important, was severely damaged by the hurricane.

2. 8. OTHER FRUITS AND VEGETABLES. About 80 tons of fruits and vegetables were exported from Montserrat, the chief items being mangoes, carrots, shallots and sweet potatoes.

2. 9. LIVESTOCK. The health of livestock in the Colony continued to be good; there was no serious outbreak of disease. Vaccination of pigs against swine fever was begun late in 1949 in the British Virgin Islands and is now routine practice there; 1,400 animals were immunised during the year.

Grazing conditions were generally good and some further progress has been made in pasture improvement in Antigua, Nevis and the British Virgin Islands.

The supply of slaughter stock is still inadequate in all Presidencies except the British Virgin Islands. In that Presidency, the export trade to the American Virgin Islands was partially disrupted owing to dissatisfaction of the St. Thomas Butchers' Association with the weighing arrangements (over which this Colony has no control) at the St. Thomas end. An alternative outlet for some cattle was found in the French West Indies, from whence traders came to Tortola, bought animals on the hoof and shipped them by schooner.

TABLE VIII.
Exports of Livestock from the British Virgin Islands.

Year.	Cattle.	Sheep.	Goats.	Swine.	Equines.	Value in \$.
1950	836 (a)	300	1,368	446	—	86,275
Average 1944/49	1,077	425	1,901	551	11	102,005

(a) Includes 268 head to French West Indies.

The prices to the producer were: 8c. per lb., liveweight for cattle, sheep and goats and 13c. per lb. for pigs ex-wharf Tortola or, 9—11c. per lb. for cattle, 9c. per lb. sheep and goats, 17c. per lb. pigs delivered to St. Thomas—all prices in U.S. currency.

Anguilla exported 41 cattle, 701 sheep, 444 goats, mainly to the Island of St. Martin. Montserrat shipped 33 equines.

2. 10. FISH. The *Tilapia melanopleura* which were introduced onto a private estate in Antigua in 1949 multiplied exceedingly, and many ponds in various parts of the Island have now been stocked with these fish. The *Tilapia* have not so far attained any great size here—seldom exceeding 6 oz. in weight—but they are palatable and it seems likely that they will before long make an appreciable contribution towards the local protein supply.

3. AGRICULTURAL STATIONS AND EXPERIMENTS.

3. 1. CENTRAL EXPERIMENT STATION: ANTIGUA. Field trials included three upon the catch-cropping of sugar cane with food crops, two manurial trials with yams and one with onions, and four tomato experiments to test various methods of spacing, staking and manuring. Response by yams to fertilizers was negligible. There are strong indications that tomatoes will pay for manuring but the trials need to be repeated before conclusions can be drawn. The indicator plant, sugar cane, in the catch-cropping trials has not yet been reaped. Observation plots on the time of manuring of maize and of sweet potatoes were laid down.

About 12 tons of cotton seed were produced on 57 acres for commercial distribution. Food and fodder crops were also multiplied to provide planting material to the public.

The breeding of Red Poll x Senegal cattle continued. At the end of the year, the herd numbered seventy, of which two are pedigree Red Poll bulls, 31 are $\frac{3}{4}$ Red Poll x $\frac{1}{4}$ Senegal, 37 are $\frac{1}{2}$ Red Poll x $\frac{1}{2}$ Senegal. Twelve bulls and eight barren cows and heifers were sold during the year. Nine lactations were completed (all $\frac{1}{2}$ Red Poll x $\frac{1}{2}$ Senegal), averaging 222 gallons in 243 days. This represents a serious drop on the previous year's average of 450 gallons. The reason for the decline is that several animals, including some of the heaviest milkers, suffered from a disturbance of the endocrine system which impaired lactation and ultimately caused ovarian troubles. Towards the end of the year, arrangements were made for an expert in infertility problems to investigate the basic cause of the trouble.

The flock of grade Black Head Persian sheep numbered 56 at the close of the year, during which 77 were sold.

Other classes of livestock were kept in small numbers for breeding or stud purposes.

3. 2. AGRICULTURAL STATION: BAYFORDS, ST. KITTS. The herd of cattle increased from 82 head to 107, of which 75 are grade Holstein, one is a pure bred Holstein bull and 21 are local foundation cows. The remaining 10 animals are grade Jerseys which were imported during the year from Jamaica with the object of comparing their performance with that of the grade Holsteins. Three grade Holstein bulls were sold for breeding purposes.

11 grade Holsteins completed lactations averaging 442 gallons in 302 days as compared with the average of 262 gallons in 251 days for 10 foundation cows. The Jersey grades were not yet in milk. The total production of milk during the year was 114,444 lbs. as against 68,054 lbs. in 1949.

Improvements were made to both the dairy and the pastures. In the latter, it was found that 2-4D (in the form of Fernoxone) gave control over *Flamingis strobilifera* which had become a serious weed. A number of introduced species of grass are being tried in one paddock. Tropical Kudzu has grown vigorously in a small observation plot and is to be extended.

3. 3. TORTOLA AGRICULTURAL STATION, BRITISH VIRGIN ISLANDS. This Station now consists of 68 acres of land utilized as follows:—Guinea grass paddocks 39 acres, elephant grass 9 acres, Guatemala grass 2 acres, mixed grass 17 acres, fruit and vegetable nursery 1 acre. The herd of Tuberculin tested Red Poll x Senegal cattle has now been brought to the stage where all 30 animals are of the $\frac{3}{4}$ Red Poll x $\frac{1}{4}$ Senegal grade. Five completed lactations averaged 3,055 lbs. of milk in 281 days. The cattle are fed on grass exclusively.

The French Canadian Light Draught stallion, which had become impotent, was replaced by a thoroughbred from Antigua. This animal is proving popular with local breeders. A Kentucky jack donkey is also kept at stud. Black Head Persian sheep, Berkshire pigs and Anglo-Nubian goats are kept in small numbers for breeding purposes.

A weighing scale was installed on the station to facilitate the marketing of livestock in the island.

3. 4. THE GROVE BOTANIC STATION: MONTSERRAT. The chief function of this station continues to be the production of pedigree Sea Island seed of the M. S. I. strain, on the lines described in the 1949 annual report; 1,908 lb. of pedigree seed were produced and distributed for multiplication. The station also sold about 250,000 tomato seedlings, 51,000 onion seedlings and 450 budded citrus trees. Tomato observation plots clearly demonstrated the greatly increased yields which can be obtained by staking.

3. 5. SUGAR CANE EXPERIMENTS ON ESTATES. A total of 41 trials were conducted in Antigua and 33 in St. Kitts, covering varieties, spacing, time of planting and rates of application of fertilisers. The full data have been published as separate reports (i) and (ii).

As a result of these experiments, a further expansion of the area to be put under the variety B 4098 is recommended in Antigua, at the expense of B 37161 and B 37172. The variety B 41217 is, for the first time, recommended for planting 25% of the Blubber Valley Light Loam soil type. In St. Kitts, B 41211 should be increased on the lower lands at the expense of B 37161. On the middle and upper lands B 41227 should be introduced.

There are no revisions to be made in the 1949 recommended rates of application of fertilisers. On the wetter upper lands in St. Kitts high level manuring with nitrogen and phosphorus, though failing to outyield standard rates in the plant crop, showed substantial gains in the first ratoon. In Antigua, there is as yet no indication that high level applications will pay.

3. 6. COTTON EXPERIMENTS. *Variety Trials* were conducted in Antigua, Nevis and Montserrat to obtain information as to the possibility of replacing the standing variety, M. S. I., by a strain of somewhat higher quality. The trials were planned and supervised by the Cotton Officer for the West Indies and are reported on by him in the Empire Cotton Growing Review. The preliminary results have been encouraging but further information on both field and factory performance will have to be obtained.

Manurials Experiments were laid down in Montserrat on four major soil series:—

- (i) Fresh Ash at Dagenham.
- (ii) Brown Earth at Tuitts.
- (iii) Shoal at Olveston.
- (iv) Alluvial at Trants.

The effects of three levels of Nitrogen (Nil, 200 lb. and 400 lb. of Sulphate of Ammonia per acre) and three levels (the same) of Superphosphate, in all possible combinations were tested in 3 x 3 factorial layouts. In one experiment, on alluvial soil, there was a significant response to the lower level nitrogenous manuring. Two of the trials were rendered abortive owing to very untoward local weather condition. The fourth trial (at Dagenham) was inconclusive as to the effect of the fertilisers but accidentally demonstrated that shelter from excessive wind had a far greater influence on yield than had nutrition.

(i) Antigua Experimental Scheme: Preliminary Report on Field Experiments reaped in 1950.
 (ii) St. Kitts Experimental Scheme: Preliminary Report on Field Trials reaped in 1950.

In a residual effects NP trial on Brown Earth at Amersham a negative result was recorded.

Notational Trial. The treatments comprise:—

(a) Cotton grown annually, with a weed fallow in the cotton close season.

(b) Cotton grown annually, except for green manure crop for a complete year at intervals, and with a bare fallow during the cotton close season.

(c) Sugar-cane, cotton, food crop and green manure rotation. Cane is to occupy the land from 1948 to May, 1950, giving one plant crop and one ratoon crop. A food crop and green manure are to be grown to April, 1951, and then three crops of cotton are to be followed by a year of a food crop and green manure, thus completing a seven year rotation in October, 1954.

(d) Similar to (c) but cane is replaced by a soiling grass.

This was the Third year of the trial. One treatment only, treatment (a), was planted to cotton during the year. Subplots were manured with pen manure at the rate of 5 tons per acre. Yields were:—

Pen manure treatment	...	360 lb. per acre
Control	...	322 " "

The plots of treatment (b) were planted in Bengal beans in November 1949. This crop did not form a very thick cover and the plots were cutlashed and ranged; and another crop was planted on 26th June and had formed quite a fair cover at the end of the year.

The cane of treatment (c) was badly eaten by rats; it was harvested on 10th May. Yield was very poor, four tons per acre, the pen manure treatment doing rather better than the control.

The grass plots were cut twice during the year thus bringing the total number of cuts to seven in a two year period, with an average of 6.7 tons per acre grass per cutting. The manured sub-plots yielded 11.5% more than the unmanured ones.

The cane of treatment (c) and the grass of treatment (d) were uprooted in June and sweet potatoes planted on 23rd June and the pen manure subplots manured again at the rate of 5 tons per acre. This crop was harvested on October 27. Yields in lb. per acre are as follows:—

	<i>Nil</i>	<i>Pen Manure</i>	<i>Means</i>
Treatment (c)	3286	3249	2767.5
Treatment (d)	2430	3087	2758.5
<i>Mean</i>	2858	3168	

The pen manure treatment gave an increase of 42% over the control.

Six-week lima beans were planted on 14th November in both (c) and d) treatment plots, but up to the time of digging under in mid-January, had not formed a good cover.

The plots of all the treatments were ranged and ridged in January for the 1951 cotton crop.

Cultivation Trial. A cultivation trial was carried out at the Grove Botanic Station. It was designed mainly to test:—

(a) the effect of a thorough type of preparatory cultivation versus a poor type.

(b) the effect of these cultivations done early and late, and

(c) the effect of nitrogenous fertilisers.

A split plot layout was adopted, the two different types of cultivation being replicated in four blocks. Each of these plots was subdivided into two subplots for an early and late treatment and each subplot further subdivided for a nitrogenous and a control treatment. The size of each plot was approximately 1/130 acre.

Thorough cultivation consisted of hoeing the weeds and shaking up grass, forking flat and then banking; poor cultivation of ranging, *i.e.*, simply hoeing the weeds off previous banks and laying them in a line in the previous furrow, and then banking.

Early cultivation started on 8th February and late cultivation on 27th February—a difference of three weeks between time of preparatory cultivation. The plots were given two doses of sulphate of ammonia, one on the 21st March and the second on the 24th April of 125 lb. per acre each.

Treatment totals in ounces.

Time of Cultivation.		Type of Cultivation.						Subplot
		Poor.			Through			
		O	N	Mean	O	N	Mean	
Early	...	2,235	2,425	2,330	2,205	2,154	2,179.5	4,509
Late	...	1,837	1,602	1,719.5	2,060	1,935	1,997.5	3,717
Mean	...	2,036	2,013.5		2,132.5	2,044.5		

The differences between the yields of early and late cultivated plots were highly significant, the early cultivated plots yielding 21% more than the late cultivated plots. Last year, a difference of 20% was obtained between preparatory cultivation in early January and mid February in the Rotational Trial.

There was also a significant interaction between the time and the type of cultivation; the bad effect of late preparatory cultivation upon yield being enhanced by poor cultivation.

The importance of early preparation of land for cotton was further demonstrated by a series of duplicate plots at the Grove Botanic Station the first pair being prepared on 3rd January, the second pair on 3rd February, the third pair on 3rd March. Planting took place on 6th March. Yields of seed cotton in lb. per acre were:—

Preparatory Cultivation done in

January	February	March
1,244	1,371	458

3. 7. BRADES STUD AND INVESTIGATING CENTRE: MONTERRAT

It is becoming clear from the observation plots at this centre that elephant grass is not a satisfactory crop for this area. Guatemala grass is better, and Antigua hay grass shows some promise. Plots of a local Indigofera have been established to test its value as a restorative crop for thin shoal soils. Arrangements have also been made to try the effect of *Cynodon dactylon* closely grazed by tethered sheep.

4. EXTENSION AND DEVELOPMENT WORK.

4. 1. COURSE ON ANIMAL HUSBANDRY. A grant of £500 under Scheme D1108(62) was made to defray the travelling and subsistence expenses of the Junior Staff of all presidential Agricultural Departments to attend courses lasting for two weeks on animal husbandry. These were organised in Antigua during August. Twenty-seven Officers divided into two groups attended the courses which were directed by the Assistant Adviser on Agricultural Education to the Comptroller of Development and Welfare in the West Indies, assisted by the Director of Agriculture and Chief Veterinary Officer. Arrangements were partially disrupted by the incidence of two hurricanes, but in general, the programme was successfully completed. The students were keen and appreciative and, it is thought, learned a lot.

4. 2. LAND SETTLEMENT AND DEVELOPMENT. There were no purchases of land for land settlement purposes during the year. In Anguilla, Landsome Estate, which was taken over in 1949, was surveyed and found to be 222 acres in area; 59 allotments have been rented on it, and the tenants have made a satisfactory start on the development of the

area. In Antigua the number of tenants increased by 181 and now, total 2,279.

Elsewhere there is no major development to report. The general standard of husbandry continues to be quite good on settlements in St. Kitts, rather poor in Nevis, and variable in both Montserrat and Antigua. In Antigua, 136 acres were tractor ploughed and 123 acres ploughed and banked for tenants at commercial rates. There is a strong demand for the extension of this type of service. It is hoped to meet this demand with help from the Sugar Industry Rehabilitation Fund towards obtaining machinery.

4. 3. CREDIT FACILITIES. There was a sharp increase in the volume of credit granted to small farmers in Antigua; where 3,980 loans to the value of \$120,922 were made, as compared with \$53,455 in 1949. Repayments at \$73,000 were more than double those of 1949. In other Presidencies, the credit turn-over is small. In Montserrat, for instance, 288 people borrowed \$2,291.

4. 4. SOIL, WATER AND FOREST CONSERVATION. The extension of soil conservation work continues slowly. In Antigua, 256.5 acres were dealt with by the Department. On Settlements in St. Kitts another 8 miles of Khus-Khus barriers were planted. In Montserrat, 63 acres were protected by grass barriers, 17 acres by stone bunds and 15 acres by contour ridging.

Forty-two convictions for offences against Forest Ordinances were recorded. Forest products extracted in Montserrat were estimated to be worth \$22,900. Figures for other Presidencies are not available.

4. 5. MARKETING AND PROCESSING. The following table summarises the volume and value of the principal crops marketed to or through the Department:—

<i>Island.</i>	<i>Crop.</i>	<i>Volume.</i>	<i>Value to Grower.</i>
Antigua	Sugar Cane (ton)	28,817	240,024
"	Seed Cotton (lb.)	1,896,947	512,227
"	Onions (lb.)	5,576	446
St. Kitts	Sugar Cane (tons)	5,714	39,793
Nevis	" " "	12,267	88,568
"	Seed Cotton (lb.)	422,692	97,667
Montserrat	" " "	116,736	26,849
"	Tomatoes (30 lb. crates)	2,954	7,386

In addition, the shipment of all cotton lint (not only Government's) was undertaken in Antigua, Nevis and Montserrat by the Department, which also collected and disbursed the proceeds to the individual producers.

The following Government processing plants were operated:— Maize mills in Antigua, St. Kitts, Nevis, Anguilla and Montserrat; ginneries in Nevis and Montserrat; two muscovado sugar factories in Nevis; cold storage plant in Montserrat.

4. 6. PLANTING MATERIAL. The routine multiplication and/or distribution of cotton seed, new varieties of sugar cane, fodder grasses food and fruit crops and ornamentals was continued as in previous years.

4. 7. STUD SERVICES. The number of services by Government stud animals recorded during 1950 are shown below:—

			Antigua Barbuda.	St. Kitts Nevis Anguilla.	Montserrat.	British Virgin Islands.	Total.
Stallion	(A)	...	10	6	—	36	52
Jack Donkeys	(B)	...	174	31	17	18	240
Bulls	(C)	...	166	259	58	23	506
Rams	(D)	...	67	44	29	4	144
Buck Goats	(E)	...	23	26	—	17	66
Boars	(F)	...	127	134	18	27	306

(A) French Canadian Light Draught and Thoroughbred.

(B) Kentucky.

(C) Grade Holstein, grade Red Poll, grade Sahiwal.

(D) Grade Black Head Persian.

(E) Anglo-Nubian and British Alpine.

(F) Berkshire, Large Black, Duroc Jersey.

4. 8. SHOWS. Successful agricultural shows were held at North Sound Virgin Gorda, East End, Jost Van Dykes, and Long Swamp, Tortola, the principal classes being for livestock. In Antigua, films on a number of agricultural topics were shown on several occasions.

4. 9. REHABILITATION OF ESTATE AGRICULTURE. Under Scheme D.465, a sum of £157. 4s. by way of a grant and £471. 12s. by way of loan were taken up for the purchase of machinery. The total expenditure under this section of the scheme to date is £36,125. 16s. Good use has been made of the assistance given to various agricultural concerns, and repayments of capital and interest have been well maintained. Repayments during the year totalled £3,346. 7s. 10d. and since the commencement of the scheme £10,708. 5s. 4d.

5. DEVELOPMENT AND WELFARE SCHEMES.

5. 1. FEDERAL. (i) *D32A and B*. Free grants totalling £9,718. This meets the cost of maintaining the post of *Director of Agriculture*, Leeward Islands. The Director was resident in the Colony throughout the year with headquarters in Antigua. He was absent from headquarters for 95 nights in the year. He paid advisory visits to the Presidencies of St. Kitts-Nevis-Anguilla (5), Montserrat (2) and the British Virgin Islands (1) and to Barbuda (1) and also attended conferences or meetings in Grenada (Sugar Quotas), Trinidad ((i) Higher Agricultural Education and (ii) Animal Husbandry), Jamaica (i) B.W.I., Directors of Agriculture (ii) Sugar Technologists, Advisory Committee of B.W.I. Central Sugar Cane Breedings Station, B.W.I. Sugar Cane Investigation Committee), Curacao (Fourth West Indian Conference), Barbados (W.I. Sea Island Cotton Association). He served as a member of the General Legislative Council, as President of the W.I. Sea Island Cotton Association, and on a number of Boards and Committees dealing with agricultural matters.

(ii) *D726*. Free grant £10,090. This grant defrays the cost of the post of *Chief Veterinary Officer*, Leeward Islands. This Officer's report is printed as Part II of this volume.

5. 2. PRESIDENTIAL. Current Schemes in the Presidencies of Antigua and St. Kitts-Nevis-Anguilla are reported upon in Parts III and IV of this volume. In Montserrat, *Scheme D. 31*, free grant of £19,829 for *Agricultural Developments* defrays the cost of most of the staff of the Department, of soil conservation and of stud and investigation centres.

6. LEGISLATION.

5. 2. ANTIGUA. The Milk Production Order, 1950 (No. 40 issued under the Defence Regulations). This Order prescribes the conditions to be fulfilled in order that any dairy may qualify to be licenced and the milk classified as Grade A.

R. B. ALLNUTT,
Director of Agriculture.

APPENDIX I.

Rainfall Records (in inches).

Month.	Montserrat: 1950.			British Virgin Islands Agricultural Station Tortola.	
	Grove.	Bethel.	Brades.	1950.	Mean of 10 years.
January	13.08	7.71	10.17	5.04	3.36
February	3.69	4.00	3.30	9.32	2.59
March	4.50	2.35	2.07	1.69	1.80
April	1.57	.52	.25	3.82	2.58
May	1.18	2.04	1.32	.20	4.62
June	4.13	4.08	4.00	1.67	3.40
July	3.30	3.18	2.15	3.13	4.40
August	7.66	4.09	12.25	7.85	4.97
September	7.46	6.64	5.23	7.35	7.29
October	9.88	8.14	7.83	10.41	7.33
November	6.67	2.88	2.68	7.67	5.27
December	4.21	5.80	2.95	1.93	3.64
Total	67.33	51.43	54.20	60.08	51.25
Mean 1942/49	64.77	47.88	51.13	—	—

APPENDIX II.

Principal Exports.

Commodity.	Unit.	Montserrat.				British Virgin Islands.	
		Quantity.		Value £		Value £	
		1950.	Average 1945/49.	1950.	Average 1945/49.	1950.	Average 1945/49.
Cotton lint	400 lb. bale	992	1,376	68,937	69,846	—	—
Cotton Seed	Ton	28	80	140	346	—	—
Cotton Seed Meal	"	161	44	1,160	316	—	—
Lime Products	"	—	—	3,787	4,762	34	66
Tomatoes	30 lb. crate	9,093	3,340	4,736	1,916	11	23
Livestock	—	—	—	71	89	17,974	21,627
Hides and skins	—	—	—	175	218	—	—
Rum	Gall.	713	—	242	—	—	27
Coconuts	—	—	—	—	—	519	348
Fish	—	—	—	—	—	1,614	1,949
Other agricultural produce	—	—	—	2,086	2,994	7,927	6,330
Total	...			81,334	80,487	28,079	30,370

APPENDIX III.

Value of Imports of Certain Commodities in £100.

Commodity.	Montserrat.		British Virgin Islands.	
	1950.	Average 1945/49.	1950.	Average 1945/49.
Wheat Flour ...	190	294	131	93
Pulses ...	1	1	3	2
Rice ...	20	28	9	6
Cornmeal (Maize) ...	4	3	10	8
Bread and Biscuits ...	23	10	6	4
Lard and Substitutes ...	4	7	16	10
Butter and Substitutes ...	17	20	12	7
Edible Oils ...	1	4	2	3
Preserved Milk ...	4	3	6	4
Cheese ...	10	4	8	4
Preserved Meat ...	28	23	12	7
Preserved Fish ...	50	49	6	2
Fruit and Vegetables ...	6	5	15	7
Coffee ...	2	3	3	2
Tea ...	1	2	1	1
Cocoa ...	5	3	4	1
Sugar ...	188	127	65	57
Total ...	554	586	309	218
Animal Feeding Stuff ...	1	2	4	1
Fertilisers ...	1	1	—	—

PART II.

REPORT

BY THE

Chief Veterinary Officer

LEEWARD ISLANDS COLONY

ON

Animal Health

DURING THE

year 1950.

PART II.

Report by the Chief Veterinary Officer Leeward Islands Colony on Animal Health during the Year 1950.

A. LIVESTOCK IN THE COLONY.

The basic policy related to the livestock industry, namely its maintenance as an integral part of a balanced agricultural system, was continued.

The only official figures available as to the numbers and different classes of livestock are those of the 1946 Census, as follows:—

<i>Cattle</i>	<i>Sheep</i>	<i>Goats</i>	<i>Swine</i>	<i>Horses</i>	<i>Poultry</i>
18,959	11,699	15,884	5,878	2,989	66,274

It can be more or less assumed that these figures would represent the average number during 1950, as the birth, death and slaughter rates have not varied considerably during the preceding years and there have been no losses from Epizootics.

The general position with regard to livestock in the Colony has been discussed elsewhere in this combined Annual Report and further reference is therefore considered unnecessary, except to state that the Veterinary Section is connected with animal husbandry in all its aspects.

B. LIVESTOCK IMPROVEMENTS.

Elsewhere in the Report, as above, reference is made to the general improvement in the breeding and management of livestock being implemented principally through the several Agricultural Stations within the Colony.

C. GENERAL POSITION WITH REGARD TO ANIMAL HEALTH.

It is very gratifying to record that the Colony continues to be free from the majority of the serious infectious and contagious diseases which exact such heavy toll in other countries. During the year under review, the average standard of animal health was maintained and no new diseases were recorded.

There has been no recurrence of Anthrax in Nevis since the 1948 outbreak, nor of Hog Cholera in the Virgin Islands since 1949.

A specific problem of Infertility was encountered in the cattle herd at the Central Experiment Station, Antigua, and further mention is made of this under the appropriate section.

The following is a summary of observed and reported diseases:

(I) INFECTIOUS AND CONTAGIOUS DISEASES.

<i>Class of Animal</i>	<i>Bacterial</i>	<i>Virus</i>	<i>Spirochae- tal</i>	<i>Protozoan</i>	<i>Fungoid</i>
Horsekind	Tetanus				
Cattle	Tuberculosis Mastitis			Piroplasmosis Coccidiosis	
Goats	Mastitis				
Swine	Tuberculosis				
Dogs		Distemper			
Poultry	Fowl Typhoid	Leucosis Complex		Coccidiosis	

(II) PARASITISM.

In Horsekind, cattle, sheep, goats, swine, poultry, cats, and dogs—
(a) Helminthiasis. (b) Ecto-parasites.

(III) DISEASES OF THE RESPIRATORY SYSTEM.

Coryza, Pneumonia (Verminous).

(IV) DISEASES OF THE ALIMENTARY SYSTEM.

Bovine and Equine Indigestion of various forms. Choke (Bovine)

(V) DISEASES OF THE SKIN.

Eczema and Non-Parasitic Dermatitis.

(VI) MISCELLANEOUS DISEASES.

These include Traumatic injuries and lamenesses; Fractures. Urticaria; Poisoning (Arsenical); Cysts and Canker (Equine); Bovine Infertility; Malnutrition, including Avitaminosis.

REVIEW OF DISEASES.

The following call for comment:—

A. BOVINE TUBERCULOSIS.

The position with regard to the incidence of this disease in the Colony may be summarized as follows:—

ANTIGUA.

At long last, it is most encouraging to report that the incidence of this infection is on the downward grade. With the gradual elimination of working oxen as a means of transport on the sugar estates, this potent reservoir of infection is being removed and should be almost non-existent.

in the next three years, at which time almost complete mechanized transport should be in operation.

The situation is even more satisfactory in the animals and herds which are supplying milk in the island. Under the Milk Production Order No. 50, which became operative during the year, milk suppliers were able to qualify for Grade A certification if they complied with certain conditions, one of which was the Tuberculin testing of all animals on the dairy with a slaughter of any reactors found; the testing to be carried out at intervals of not less than two or more than six months.

Three such herds were certified during the year as follows:—

Herd No. 1	218 animals tested	1 Reactor.
Herd No. 2	85 animals tested	1 Reactor.
Herd No. 3*	58 animals tested	no Reactor.
361 animals tested. Percentage of Reactors .5%		

Arrangements were also being made for further herds to be tested during 1951.

ST. KITTS, NEVIS, ANGUILLA.

A survey into the incidence of this disease was commenced late in the year and it is hoped to continue this during 1951.

During the year, one hundred and forty-two (142) animals were tested—one reactor or a percentage of .7%

MONTSERRAT.

The position remains unchanged, namely, the incidence of the disease known to be negligible.

VIRGIN ISLANDS.

This area remains as one accredited free of the disease.

B. BOVINE INFERTILITY.

CENTRAL EXPERIMENT STATION, ANTIGUA.

During the year 1945, importations of "Nelthropp" cattle were made from St. Croix, U.S. Virgin Islands for the establishment of such herd at the Central Experiment Station, Antigua. The breeding programme was two-fold; the establishment of a nucleus of the "Nelthropp" breed and the upgrading of these by the use of pure-bred Poll bulls. During 1945—1948, these animals did well, especially with regard to milk yields. However in 1949, noticeable declines were

*Central Experiment Station, Friars Hill, Department of Agriculture.

noted in the yields and a certain amount of difficulty was experienced in the settling of some of the cows. At the same time a few cows and heifers presented a clinical picture of an animal suffering from cyst ovaries but without the accompanying Nymphomaniasis together with a noticeable assumption of masculine characteristics.

Due to the importance of this condition, a complete report was prepared and submitted to the Adviser on Animal Health, Colonial Office for consideration, and as a result, the problem was considered of sufficient significance and complexity to warrant a visit to Antigua by a specialist in Bovine Infertility. Before the end of the year, arrangements were made for Mr. S. L. Hignett, B. Sc., M.R.C.V.S., Wellcome Veterinary Research Station, Sussex, England, to visit Antigua in February, 1951, to carry out investigations.

C. PARASITISM.

The usual degree of parasitic infestation was noted in the various classes of livestock in the Colony and it is readily apparent that the available knowledge concerning treatment, control, and prevention of internal parasites, especially, is not being implemented to the fullest advantage.

The stomach worm in sheep and goats (*Haemonchus Contortus*) continues to cause heavy losses. The majority of livestock owners fail to realize the incidence of parasitism in their animals is directly related to the standard of their management, and very little attempt is made to control such undesirable features as overcrowding and continued use of pastures, use of marshy and poorly drained areas of grazing. The usual procedure is to ask for advice and help when the animals are in an advanced stage of parasitic infestation, at which time treatment is usually hopeless. However it is encouraging to record that some livestock owners are now realizing the importance of control measures combined with the judicious use of Phenothiazine.

The incidence of tick infestation is also a problem especially in the island of Nevis and it is gratifying to record that it is proposed to make a start on the provision of either dipping or spraying facilities at selected Land Settlement Centres.

Continued good use is being made of the dipping tank facilities in Antigua (five tanks) and the Virgin Islands continue to be an area accredited free of the cattle tick.

D. GENERAL.

(1) PRIVATE PRACTICE.

As from November, 1950, arrangements were made for the Chief Veterinary Officer to undertake private practice in the Presidencies of

Antigua, Montserrat, and the British Virgin Islands. Under this Scheme, a schedule of fees and charges was approved, all fees and cost of drugs etc. being paid direct to the Treasury.

(2) VISITS.

The following routine and special visits were made by the Chief Veterinary Officer:—

(a) TRINIDAD. 24th February—5th March—attended the Livestock Conference held under the auspices of the Caribbean Commission, at which meetings the Chief Veterinary Officer was Chairman of the Conference.

(b) ST. CROIX, AMERICAN VIRGIN ISLANDS. 16th March—24th March.

(c) BARBUDA. 4th—7th April.

(d) ST. KITTS—NEVIS. 17th—23rd May.

(e) MONTSERRAT. 24th—29th June.

(f) ST. KITTS—NEVIS. 19th—24th July.

(g) ST. KITTS—NEVIS. 21st—24th September.

(h) BRITISH VIRGIN ISLANDS. 29th October—6th November.

(3) LECTURES.

During the year, a short course on Animal Husbandry was organised for the junior agricultural Staff in the Colony. Lectures and practical demonstrations were given on the following subjects:—

(a) Anatomy (b) Physiology (c) Minor Ailments and First Aid
(d) Restraint and Medication of Animals (e) Infectious and Contagious Diseases.

(4) ANIMAL DISEASES REPORTING SERVICE.

This service inaugurated by the Caribbean Commission was operated during the year, and monthly reports were submitted on a Colony basis. The annual summary of infectious and contagious diseases for 1950 is as follows:—

Canine Distemper	....	One case
Piroplasmosis (bovine)	....	Two cases
Pullorum Disease	....	Two cases
Tuberculosis (reactors)	....	.5%.

(5) ANIMAL LEGISLATION.

The following Ordinance, and Statutory Rules and Orders were enacted during the year:—

ANTIGUA.

1. Ordinance No. 7 of 1950. Dogs (Amendment) Ordinance, 1950.
2. S. R. & O. No. 3 of 1950. Landing of Animals Prohibition (Revocation) Order, 1950.
3. S. R. & O. No. 5 of 1950. The Landing of Animals Prohibition Order, 1950.
4. S. R. & O. No. 6 of 1950. Landing of Animal Products Prohibition Regulations, 1950.
5. S. R. & O. No. 9 of 1950. Importation of Animals (Amendment) Rules 1950.

MONTSERRAT.

1. S. R. & O. No. 3 of 1950. The Importation of Swine Order 1950.
2. S. R. & O. No. 4 of 1950. Landing of Animal Products Prohibition Regulations 1950.
3. S. R. & O. No. 8 of 1950. Importation of Animals Regulations 1950.
4. S. R. & O. No. 9 of 1950. Landing of Animals Prohibition Order 1950.

VIRGIN ISLANDS.

NIL.

ST. KITTS—NEVIS.

1. S. R. & O. No. 3 of 1950. (Revocation order).
2. S. R. & O. No. 8 of 1950. Prohibits landing of certain animals from specified countries.
3. S. R. & O. No. 9 of 1950. Prohibits the landing of all animals from certain countries.

(6) LABORATORY AND INVESTIGATIONAL WORK.

The former comprised (1) Blood films for microscopic examination and diagnosis; (2) Urine samples, routine tests as well as mares' urine for diagnosis of pregnancy; (3) Milk samples for diagnosis of Mastitis; (4) Faecal examination for parasitic ova; (5) Routine blood counts; (6) Seminal fluid for microscopic study.

A certain amount of investigational work was conducted on Vibrionic infection in cattle and sheep, and it is hoped to be able to continue this during 1951.

(7) PUBLICATIONS.

"Observations on Staphylococcal Infections in the Dairy Goat."
Published in the Veterinary Record, Vol. 62; No. 18, May, 1950.
L. R. Hutson.

L. R. HUTSON, D.V. Sc.,
Chief Veterinary Officer.

PART III.

ANNUAL REPORT

OF THE

Antigua Department of Agriculture,
Lands, Marketing and Credit

FOR THE

Year 1950.

TABLE OF CONTENTS.

			<i>Paragraphs.</i>
STAFF LIST	...	...	A
SECTION 1. Review of Agricultural Production			
	A. ANTIGUA.		
Weather Conditions	...	...	1.1
Sugar	...	...	1.2
Cotton	...	...	1.3
Food Production	...	...	1.4
Livestock	...	...	1.5
Statistics of Exports and Imports	...	...	1.6
	B. BARBUDA.		
Preface	...	...	1.7
Rainfall	...	...	1.7
Cotton	...	...	1.8
List of Exports	...	...	1.9
SECTION 2. Agricultural Stations.			
	A. CENTRAL AGRICULTURAL STATION.		
Aims and objects	...	...	2.1
General	...	...	2.2
Weather conditions	...	...	2.3
Land usage	...	...	2.4
Buildings	...	...	2.5
Water supplies	...	...	2.6
Fencing	...	...	2.7
Cotton Seed Farm	...	...	2.8
FOOD CROPS	...	...	2.9
	(a) Experiments 1—10		
	(b) Observations 1—5		
Tobacco	...	...	2.10
Cane	...	...	2.11
Cattle	...	...	2.12
Horses	...	...	2.13
Donkeys	...	...	2.14
Sheep	...	...	2.15
Goats	...	...	2.16
Pigs	...	...	2.17
Poultry	...	...	2.18
Animals sold	...	...	2.19
Stud services	...	...	2.20
Haymaking	...	...	2.21
Distributions of Planting Material	...	...	2.22
	B. GREENCASTLE NURSERY AND FRUIT FARM.		
Land Usage	...	...	2.23
General	...	...	2.24
SECTION 3. Sugar Cane Investigations.			
Organisation	...	...	3.1
Trials Reaped	...	...	3.1
Recommendations	...	...	3.2
Approved Scheme	...	...	3.3

SECTION 4. Extension and Development Work.

Districts	...	...	4.1
Duties of an Instructor	...	...	4.1
Scope of Work	...	...	4.2
Land Settlements	...	...	4.3
Settlements, Buildings, etc.	...	...	4.4
Tractor Ploughing	...	...	4.5
Settlement Committees	...	...	4.6
Improvement of Estate Agriculture	...	...	4.7
Distribution of Planting Material	...	...	4.8
Soil and Water Conservation	...	...	4.9
Forest Conservation	...	...	4.10
Cotton Protection	...	...	4.11
Livestock Improvement	...	...	4.12
Plant Nurseries	...	...	4.13
Instructional	...	...	4.14
Boards, Committees, etc.	...	...	4.15

SECTION 5. Marketing and Credit.

Volume of work	...	...	5.1
Credit	...	...	5.2
Cane	...	...	5.3
Cotton	...	...	5.4
Fruit, Vegetables, Seeds and Insecticides	...	...	5.5
Corn Factory	...	...	5.6

SECTION 6. Colonial Development and Welfare Schemes.

Scheme D. 465	...	...	6.1
„ D. 1374	...	...	6.2
„ D. 1313 and D. 1948	...	...	6.3

SECTION 7. Agricultural Legislation.

APPENDICES—

- I. Rainfall in Antigua—1950.
- II. Rainfall in Antigua. Means 1933—1950
- III. Sugar Statistics. 1939—1950.
- IV. Value of certain Imports: 1945—1948; 1949 & 1950.
- V. Principal Exports.
- VI. Approved Financial Estimates.

STAFF as at 31st December, 1950.

Agricultural Superintendent ... C. A. S. HYNAM, D.I.C.T.A.

Experimental Section.

Assistant Agricultural Superintendent ... E. R. H. MARTIN, D.I.C.T.A.

Junior Assistant ... L. A. WATKINS*

Central Experiment Station.

Manager ... R. L. V. HALL

Agricultural Assistant ... Vacant

Farm Foreman ... R. FRANCIS

Marketing and Credit.

Marketing Officer ... L. M. F. PARRIS

Accountant ... MCC. GEORGE, LL.B.

Land Settlement and Development.

Agricultural Assistant ... V. G. PEREIRA

Agricultural Assistant ... Vacant

Junior Assistant ... F. E. WILLOCK†

Senior Instructors ... E. ROBERTS

... C. E. GREENAWAY

Instructors ... J. M. A. EDWARDS‡

D. S. LEWIS

E. C. SCHOUTEN

C. E. WINTER§

R. ARRINDELL

L. HODGE

C. WALSH (*Acting*)

T. JOSEPH (*Acting*)

Foreman, Greencastle Station ... R. E. M. WHYTE

Protection Service.

Forestry and Cotton Protection Officers ... R. V. CAMACHO

... C. K. G. VIEIRA

*Acting Agricultural Assistant.

†On study leave throughout the year.

‡Acting Agricultural Assistant.

§Acting Junior Assistant.

Section I.

REVIEW OF AGRICULTURAL PRODUCTION.

(A)—ANTIGUA.

(Population approximately 43,000)

1. 1. WEATHER. The average rainfall recorded from 40 Stations was 48.07 inches which is 5.91 ins. above the average (42.19 ins.) over the 17 years 1933—49. The lowest for 1950 (40.12 ins.) was recorded at Blackmans in the northeast and the highest (58.01 ins.) at Wallings in the centre of the Island.

Appendices I and II give details of rainfall for 1950 and means for the period 1933—1950.

There were two tropical disturbances during the year. The first of these was of moderate intensity, affecting mainly the southern part of the Island where there was considerable damage to trees and property. Heavy rain was recorded over the Island over 7 ins. being measured at the Central Experiment Station. Apart from wash, damage to the sugar cane crop was negligible, and there can be little doubt that the rains were on the whole beneficial to this crop.

The second disturbance was of far greater intensity. This occurred on the night of the 31st August. Damage to property and all crops was extensive. A large number of fully grown trees were destroyed or damaged and the greater part of any fruit tree in bearing were blown off. Damage to the standing sugar cane crop was principally to plant canes, particularly of the widely grown variety B.4098. A large number of canes were broken off below the growing point. There was also damage to the entire crop of a less permanent nature due to the stripping of leaves.

It is estimated that this hurricane will result in the loss of sugar for 1951 crop of 10—15%.

Indirectly also, the cane crop was adversely affected owing to delays in cultivation and the general disruption of farming routine.

The cotton crop was fortunately not yet planted when the second hurricane hit the Island. The only effect that it had on this crop was that there was some delay in planting and preliminary land preparation.

Part of the planting seed which was stored at the Government Marketing Depot was wetted by sea water. Provided the seed appeared otherwise to be in good condition, it was given out for planting pending the arrival of fresh seed from Montserrat. It is interesting to note that quite satisfactory germination resulted.

Average Barometer readings for the year were 30.00 ins. at 9 a.m. and 29.95 ins. at 3 p.m. Monthly averages are given in the Table below:—

Barometer Readings.

(Inches of Mercury)

<i>Month.</i>		<i>Average.</i>	
		9 a.m.	3 p.m.
January	...	30.077	30.018
February	...	30.021	29.943
March	...	30.079	29.997
April	...	30.013	29.990
May	...	29.998	29.923
June	...	30.003	29.983
July	...	30.065	30.008
August	...	29.944	29.921
September	...	29.977	29.920
October	...	29.954	29.876
November	...	29.898	29.856
December	...	29.964	29.948

The lowest recorded reading was 29.751 at 9 a.m. on 21st August. The highest 30.193 at 9 a.m. on 4th July.

Temperatures recorded at the Cotton Station varied from mean maxima of 86.2° in August and 78.8° in January to mean minima of 76.1° in July and 69.3° in January. Average humidity at the above Station varied from 85.2% in October to 73.4% in March. Average hours of sunshine varied from 10.1 in July to 7.6 in October.

The above data from the Cotton Station have been made available for this Report through the courtesy of the Cotton Adviser to the British West Indies.

1. 2. SUGAR. The Antigua Sugar Factory Ltd. produced 30,681 long tons grey crystals and 6873.43 tons of final molasses from 246,811 tons of cane ground.

The crop was started on 26th January and finished on 18th September. The Antigua Sugar Factory Ltd. considered that it should have been possible to have finished early in August, but there was a delay of 2 weeks caused by a strike on the waterfront. Deliveries of cane, although high per week, were not regularly distributed throughout the week. Slow reaping towards the end of the crop resulted also in some cane being left over.

Montpelier Factory produced 422 tons muscovado from 253 acres.

Approximations of the percentages of different varieties reaped in 1949 and 1950 are as follows:—

<i>Variety</i>	<i>1949</i>	<i>1950</i>
B37161	55.20	45.63
B4098	24.20	35.17
B3439	7.60	6.71
B34104	9.20	9.07
B37172	3.10	2.35
Other	0.70	1.07
	100.00	100.00

Export sugar from the Antigua Sugar Factory Ltd. was sold to the Ministry of Food at £27 15s. 0d. (\$133.20) per ton c.i.f. plus 2 15s. 0d. (\$13.20) per ton to be held by the Antigua Government Special Funds for Rehabilitation, Price Stabilisation and Labour Welfare.

The Antigua Sugar Factory Ltd. exported 27,250 tons of sugar valued at \$3,543,590 and 917,276 gallons of molasses valued at \$35,241.

Non-contracting suppliers received a total of 37s. 9d. (\$9.06) per ton of cane and contractors, including contracting peasant Settlements, a total of 41s. 7.1195d. (\$9.98239) per ton.

The area reaped in 1950 was approximately 11,800 and that to be reaped in 1951 10,500.

Sugar production in 1951 was estimated at the end of 1950 at 1,000 tons from the Antigua Factory Ltd. and 450 tons muscovado from Montpelier.

Once again, it is unfortunate that owing to a number of causes, cultivation and drainage of heavier soils were not completed in the dry season. This results in poorer tilth which is reflected in ratoons as well as in new plantings. In addition, it has been shown that on certain lands, September and/or October rather than November plantings will result in increased plant cane yield.

The Table below gives some comparative statistics concerning 1949 and the previous 10 year period. More details are given in Appendix III.

		1950.	Previous Ten Years.		
			Average.	Highest.	Lowest.
Acres	...	11,800	10,484	12,669 (1940)	8,525 (1944)
Total Tons Sugar	...	31,100	19,270	26,146 (1946)	12,174 (1948)
Tons Cane per acre	...	21.3	15.14	207 (1946)	9.8 (1940)
Tons Cane per ton sugar	...	8.07	7.88	8.71 (1942)	7.15 (1945)
Tons Sugar per acre	...	2.64	1.95	2.73 (1946)	1.10 (1940)

1. 3. COTTON. The 1949-50 crop reaped from 3949 acres amounted to 776,153 lb. clean lint and 64,125 stains. Production Barbuda was insignificant amounting to only about 400 lb. clean lint.

Table A gives some statistics covering the period under review and previous seasons and Table B the Raw Cotton Commission's grading of clean lint exported to them during 1950 and the three previous seasons:-

TABLE A.

			1950.	Previous 10 year period: 1940—49		
				Average.	Highest.	Lowest.
Acreage reaped—acres	...	...	3,949	2,135	4,826 (1940—41)	498 (1946—47)
Production clean lint—lb.	...	...	776,153	332,242	873,564 (1948—49)	73,530 (1942—43)
Production stains—lb.	...	...	64,125	...	...	...
Total—lb.	...	...	840,278	...	...	...
Yield per acre clean lint	...	...	196.54	156	253 (1945—46)	82 (1942—43)
Average price per lb. clean lint f.o.b.	...	...	\$0.80	\$0.51	\$0.78 (1948—9)	\$0.38 (1945—6)
Price paid for clean seed cotton	...	...	\$0.22	...	...	...
Value of lint exported	...	...	\$624,244.19	\$180,257.45	\$684,725.20 (1948—9)	\$35,300 (1942—3)

TABLE B.

Season.	G1	G2x	G2	G3x	G3	G3 ss	G4x	G4	G5x	G5	G6	Total
1946—47	—	28	45	116	65	—	—	5	—	—	—	253
1947—48	—	13	80	108	—	495	—	—	—	—	—	690
1948—49	48	146	392	310	1,053	193	442	279	2	5	1	2,871
1949—50	27	118	354	484	1,135	—	92	230	7	17	—	2,464

ss—Short Staple.

There were fairly heavy attacks of the cotton leaf worm but they came in most cases relatively late in the season when most plants were well advanced. Pink boll-worm attacks were moderate only.

The Department continued to be the sole purchaser of seed cotton and to exercise close supervision of all cotton going to the gins.

The entire crop of certified clean lint was sold to the Raw Cotton Commission.

Planting of the 1950—51 crop was later than usual owing to the fact that heavy rains following the hurricane of 31st August made conditions unsuitable for planting at the beginning of the season (1st September). And even after planting, following rains made weed control difficult. Many plants therefore got off to a bad start. Attacks of the leaf worm up to the end of the season were slight only except in certain of the eastern districts.

4015 acres were registered as having been planted in 1950 to be reaped in 1951.

Ten meetings of the Board of Management of the Antigua Cotton Growers' Association and one General meeting were held during the year. The Board was, as usual, active in negotiating prices, etc. Members had the opportunity during the year of meeting Mr. Twyman of the Advisory and Negotiating Committees in England of the West Indian Sea Island Cotton Association, who visited the Leeward Islands and discussed matters of importance on the spot.

The Honorary Secretary-Treasurer of the Association (the Agricultural Superintendent) and another member had the opportunity of attending meetings of the Advisory Committee in England and of seeing grading done in Liverpool.

1. 4. FOOD PRODUCTION.

In the first 4 months and the last 2 months of the year, locally grown vegetables and ground provisions were in good supply. Supplies diminished somewhat in May and June and there were periodic scarcities in July—October, which, after August, were intensified owing to losses of growing plants during the hurricane.

1. 5. LIVESTOCK.

The following are extracts from the "Report of the Chief Veterinary Officer, Leeward Islands Colony on Animal Health during the year 1950" reproduced here with this Officer's permission:—

"It is very gratifying to record that the Colony continue to be free from the majority of the serious infections and contagious diseases which exact such heavy toll in other countries. During the year under review, the average standard of animal health was maintained and no new diseases were recorded".

A. BOVINE TUBERCULOSIS.

The position with regard to the incidence of this disease in the Island may be summarised as follows:—

At long last, it is most encouraging to report that the incidence of this infection is on the downward grade. With the gradual elimination of working oxen as a means of transport on the sugar estates, this potential reservoir of infection is being removed and should be almost non-existent in the next three years, at which time almost complete mechanised transport should be in operation.

The situation is even more satisfactory in the animals and herds which are supplying milk in the Island. Under the Milk Products Order No. 40, which became operative during the year, milk suppliers were able to qualify for Grade A certification if they complied with certain conditions, one of which was the Tuberculin testing of animals on the dairy with a slaughter of any reactors found; the test to be carried out at intervals of not less than two or more than six months.

Three such herds were certified during the year as follows:—

Herd No. 1	218 animals tested	1 Reactor
Herd No. 2	85 animals tested	1 Reactor
Herd No. 3*	58 animals tested	No Reactor.

361 animals tested, Percentage of Reactors .5

Arrangements were also being made for further herds to be tested during 1951.

B. BOVINE INFERTILITY.

CENTRAL EXPERIMENT STATION, ANTIGUA.

During the year 1945, importations of "Nelthropp" cattle were made from St. Croix, U.S. Virgin Islands, for the establishment of such a herd at the Central Experiment Station, Antigua. The breeding programme was two-fold; the establishment of a nucleus of "Nelthropp" breed and the up-grading of these by the use of pure-bred Red Poll bulls. During 1945—1948 these animals did well, especially with regard to milk yields. However in 1949, noticeable declines were

*Central Experiment Station, Friars Hill, Department of Agriculture.

noted in the yields and a certain amount of difficulty was experienced in the settling of some of the cows. At the same time, a few cows and heifers presented a clinical picture of an animal suffering from cystic ovaries but without the accompanying Nymphomaniasis together with a noticeable assumption of masculine characteristics.

Due to the importance of this condition, a complete report was prepared and submitted to the Adviser on Animal Health, Colonial Office for consideration, and, as a result, the problem was considered of sufficient significance and complexity to warrant a visit to Antigua by a specialist in Bovine Infertility. Before the end of the year, arrangements were made for Mr. S. L. Hignett B.Sc., M.R.C.V.S., Wellcome Veterinary Research Station, Sussex, England, to visit Antigua in February 1951 to carry out investigations.

1. 6. STATISTICS OF EXPORTS AND IMPORTS. See Appendices IV and V.

(B) BARBUDA.

(Population approximately 1,000)

1. 7. No Officer of the Agricultural Department is stationed here. The Department functions in an advisory capacity only.

In November, an Officer of the Department, Mr. C. E. Greenaway, was seconded to act as Warden following the resignation of Mr. C. A. Gomez.

The following are extracts from the Acting Warden's Report:—

“ RAINFALL. The total precipitation recorded in Codrington Village was 30.96 inches as compared with 42.54 in 1949. January proved wet, but the period February to July was very dry—a total of 4.66 inches only was recorded during this period of six months. The Table below gives details:—

January	4.02
February	1.27
March	.68
April	1.93
May	.33
June	.45
July	1.12
August	14.23
September	4.06
October	6.12
November	4.85
December	1.90

40.96

Some efforts were made to encourage the growing of food crops on a larger scale both for local consumption and exports to Antigua but unfortunately the very adverse weather which prevailed during the first half of year seriously affected agriculture and animal husbandry of the Island. Most pastures were reduced to bare earth resulting in the death of about 30 animals. Had it not been for the extensive area over which animals range freely, the death rate would have been much higher.

Extensive areas were cleared of bush and made ready for crops of cotton, corn, peanuts, etc. but the two destructive tropical disturbances which visited the Island during August—September curtailed the enthusiasm and activities of the inhabitants: however, small quantities of these commodities were reaped and found a ready market in Antigua.

1. 8. COTTON. The area planted with cotton was very small. The insignificant amount of 1,442 lbs. of clean seed cotton harvested during March to May bears evidence of the small area cultivated. This was handled at the Government Cotton Ginnery and subsequently shipped to Antigua for ginning and processing prior to export to the U.K.

A first payment of 16 cents per lb. seed cotton was made and after all expenses were deducted, a second payment of 7 cents per lb. was paid out to growers. A total of 484 lbs. clean cotton lint (33.05%) resulted.

1. 9. The Table hereunder gives a list of some exports (chiefly to Antigua) during 1948—1950:—

Commodity.	1948.			1949.			1950.		
	Quantity.	Estima- ted Value \$		Quantity.	Estima- ted Value \$		Quantity.	Estima- ted Value \$	
Seed Cotton (lbs.) ...	9,634	1,445		19,483	4,189		1,442	332	
Charcoal (bags) ...	7,500	4,200		7,196	5,060		6,250	5,250	
Livestock:—									
Donkeys ...	11	66		2	20		4	60	
Horses ...	14	1,008		8	400		7	420	
Mules ...	7	672		4	480		6	900	
Goats ...	313	1,084		306	918		320	461	
Cattle ...	38	1,824		32	1,280		30	750	
Sheep ...	140	390		130	520		129	258	
Pigs ...	3	28		—	—		—	—	
Brooms ...	—	—		—	—		420	25	
Peanuts (lbs.) ...	—	—		—	—		6,428½	1,672	
Beans (lbs.) ...	—	—		—	—		4,152	415	
Total ...		10,817			12,867			10,543	

Section II.

AGRICULTURAL STATIONS.

A. CENTRAL AGRICULTURAL STATION.

2. 1. *Aims and Objects.*

(a) To keep a high standard of Agriculture, including Animal Husbandry, before Antigua and the Leeward Islands.

(b) To work out as the result of experiments adaptations of the above, which can be of early practical value.

(c) To multiply selected planting material and stock for distribution direct to estates and small holders or to sub-stations and Demonstration and Stud centres throughout Antigua and the Leeward Islands.

(d) To train personnel for Agricultural service in private or public capacities in the Leeward Islands.

2. 2. GENERAL. Work on the site started in 1945. Owing to modifications of the original Colonial Development and Welfare Scheme 465 and restrictions on the building programme, the bulk of the developmental work was not completed until the end of 1948.

With the expiry of the Scheme 465 at the end of 1949, lack of funds sufficient to carry out the original long term programme resulted in its considerable modification. The principle had to be accepted that the Station should eventually be self-supporting and work was arranged with the object of achieving self-support in 1953. This has resulted in relatively less emphasis on investigational work and training of personnel and more on commercial cropping.

Funds sufficient to make up the short-fall of revenue over expenditure until 1953 have been applied for in the Ten-year Plan: but pending the approval of the Plan, the Station has had to carry on with the assistance of short-term loans and advances.

2. 3. WEATHER CONDITIONS. The hurricanes referred to in para. 1. did considerable damage to buildings, etc., but damage to crops was not considerable.

The planting and preparation of land, however, was delayed and heavy weed growth following the hurricanes coupled with a shortage of labour in the district resulted in 10 prepared acres having to be abandoned for the time being.

Rainfall figures for 1950 and the three previous years are given below:—

	1947. inches.	1948. inches.	1949. inches.	1950. inches.
January ...	3.97	2.82	1.50	5.41
February ...	.57	.57	2.07	2.52
March ...	.59	1.89	5.52	1.58
April ...	.67	.59	3.54	2.44
May ...	3.34	2.80	1.98	2.06
June ...	1.49	3.38	3.35	1.66
July ...	2.97	1.37	2.10	1.85
August ...	2.50	2.29	6.66	10.71
September ...	7.82	3.79	10.92	6.34
October ...	4.28	8.69	5.85	5.13
November ...	.43	3.08	2.59	4.43
December ...	.21	3.42	2.98	2.64
	28.84	34.69	49.06	46.77

2. 4. LAND USAGE. The following table shows the actual land use over the period.

	<i>Acreage</i>	<i>Remarks</i>
Roads and Buildings	38.00	
Cane nurseries & Experiments	7.99	
Cane (Commercial)	111.50	
Food Crops, experiments	1.85	
Food Crops (Commercial)	34.21	
Paddocks	139.21	
Scrub Bush Paddocks (approx.)	128.94	
Vegetable Garden	1.80	
Fodder Crops	12.00	
Cotton	57.00	
Hay	15.50	
Cotton Station	34.00	
Prison Garden	18.00	600.00

All the available land is now being used.

2. 5. BUILDINGS. No new buildings were erected during the year, but much hurricane damage had to be repaired.

The goat pen was removed to a more favourable site and extended to accommodate the growing flock (see para. 2. 16).

2. 6. WATER SUPPLIES. The well dug in 1948 on the spot indicated by Mr. C. Bell of Jamaica, a Water Diviner, continued to be the chief source of supply for animals.

Piping was replaced from time to time.

Fresh water collected in cisterns from buildings provided ample supplies of fresh water for all requirements.

The largest of 3 ponds supplied more than sufficient water for the watering of seedlings, etc. in the vegetable garden.

2. 7. FENCING. Existing paddock fences were maintained and approximately 60 new acres were enclosed, 40 of which were scrub land previously unutilised.

2. 8. COTTON SEED FARM. About 11,880 lbs. of first multiplication pedigree seed from the breeding Station in Montserrat and 15,980 second multiplication seed were produced from 57 acres. Total yield of seed cotton amounted to 41,796 lbs. *i. e.* at the rate of 733 lbs. per acre. Yields varied from 1,100 lbs. per acre in a sixteen acre field to 505 lbs. per acre in a 30 acre block.

2. 9. FOOD CROPS. (a) EXPERIMENTS. Work was done on the following in 1950.

<i>No.</i>		<i>Season</i>
1 & 2	Cane with catch crops on 2 different soil types	1949—51
3 & 4	Yam. Manurial on 2 different soil types	1949—50
5	Tomato Spacing and Staking	1949—50
6	Tomato Manurial	1949—50
7	Cane with catch crops	1950—52
8	Tomato manurial	1950—51
9	Tomatoes with pen manure staking and spacing	1950—51
10	Onion Manurial	1950—51

1 AND 2 CANE WITH CATCH CROPS.

OBJECT. To assess the effort of catch-cropping on the subsequent yield of canes.

Two similar randomised block experiments were laid down, one on a Fitches-Gunthorpe clay (texture and appearance predominantly Fitches) and the other on a predominantly Gunthorpe soil type with some admixture of Fitches.

Catch crops planted in 1949 on land prepared for cane were maize, sweet potatoes, six weeks beans and green manure and tomatoes.

The tomato crop failed and onions were transplanted in January 1950 on the former tomato plots shortly after cane cuttings had been put in.

Yields of all catch crops reaped have been recorded.

Plant canes will be reaped in 1951, after which the figures will be analysed and results published.

3. MANURIAL EXPERIMENT WITH YAMS.

Soil Type	Fitches—Gunthorpe clay
Planted	14/6/49
Reaped	9/3/50
Layout	Two 5×5 Latin Squares
Effective Plot size	1/74 acre
Spacing	2 ft. apart on banks 3½ ft. apart
Variety	Liston
Manures applied	Artificials on 20/7/49 Pen manure incorporated in the banks on 11.6.49
Rainfall during life of crop	41.36

<i>Experimental treatments (per acre)</i>	<i>Average Yields (tons tubers per acre).</i>
1. Nil	... 7.57
2. N—2 cwt. Sulphate of Ammonia	... 6.77
3. P—2 cwt. Superphosphate (18% water soluble P_2O_5)	... 7.40
4. NP—2 cwt. Superphosphate plus 2 cwt. Sulphate of ammonia	... 7.76
5. PM—10 tons pen manure	... 7.66

On 15. 8. 49, it was observed that the stand was good and uniform.

Differences in yield are not significant.

The results of this and the following experiment are in keeping with those of similar trials done in 1948–49, on the same soil types. No significant responses to manures were obtained.

4. MANURIAL EXPERIMENT WITH YAMS.

Soil type	Gunthorpe—Fitches
Layout	Two 4×4 Latin Squares
Effective Plot size	1/45 acre
Spacing	2 ft. apart on banks 3½ ft. apart
Planted	10/5/49
Reaped	7/3/50
Rainfall during life of crop	42.83 ins.
Artificials applied	16/6/49

<i>Experimental treatments (per acre)</i>	<i>Yields (tons tubers per acre).</i>
1. Nil	... 4.7
2. N. 2 cwt. Sulphate of Ammonia	... 4.9
3. P. 2 cwt. Superphosphate (18% P_2O_5)	... 5.1
4. NP. 2 cwt. Superphosphate plus 2 cwt. Sulphate of Ammonia	... 5.1

On 27/6/49, a very uniform and vigorous stand was observed.

The site was used for a similar experiment in 1948 and 1949: plots and treatments remaining the same.

Differences in yields are not significant.

5. TOMATO EXPERIMENT WITH SPACING AND STAKING.

Owing to heavy attacks of mites (*Eriophyes* sp.) irregular planting material and insufficient supervision during reaping operations, the detailed results from this experiment are not considered sufficiently reliable for publication.

There are indications however that staking gave better yields than no staking. Approximate total yields are as follows:—

No staking	... 6,500 lbs. per acre.
Brushwood support	... 7,600 " " "
Trellis staking	... 7,720 " " "

6. TOMATO MANURIAL EXPERIMENT.

Soil Type	... Fitches-Gunthorpe
Layout	... 2 x 2 x 2 Factorial
Effective Plot size	... 1/97 acres
Spacing	... 3 x 1½ ft.
Planted	... 14/12/49
Reaping completed	... 27/4/50
Rainfall during life of the crop	... 13.62 ins
Artificial applied	... 23/12/49
Pen manure applied	... 16/12/49

Owing to gross irregularities as regards yields within one block, the results from this block were not included in the analysis hereunder.

<i>Experimental Treatment (per acre)</i>	<i>Average yields (3 blocks only) (lbs. per acre).</i>
1. Nil	4,462
2. N: 1 cwt. Sulphate of Ammonia	3,880
3. P: 1 cwt. Superphosphate (18% W. S. P ₂ O ₅)	4,753
4. D: 3 tons Pen Manure	4,559

Combinations of the above

5. NP	4,753
6. ND	6,208
7. PD	5,141
8. NPD	6,111

Two Way Table Illustrating Features of Interest

	DO	D1	Mean
N0	4611	4856	4735
N1	4344	6171	5257
Mean	4477	5514	4995

Although none of the treatments gave significant results there were indications of responses to pen manure. The indication of interaction between the effect of Nitrogen and Pen Manure suggests that the manure used was of poor quality.

Yields are low due to the fact that there was a bad attack of mites soon after the tomatoes were planted. It was eventually controlled by dusting with sulphur.

7. CANE WITH CATCH CROP. An experiment similar to 1 and 2 was started during the year on Gunthorpes soil. Canes planted in early 1951 will be reaped as plant canes in 1952.

8. TOMATO MANURIAL. An experiment to assess the effect of artificials singly and in combinations was laid down. This will be reaped in 1951.

Dusting with sulphur was done regularly and a good stand was obtained.

9. TOMATOES WITH PEN MANURE, SPACING AND STAKING. This experiment will be reaped in 1951. As in 8 above, a good stand was obtained.

10. ONION MANURIAL. This experiment was badly attacked by thrips. Attempts to control this pest with tarter emetic and sugar spray were unsuccessful. Results from reapings in 1951 are not likely to be of much value.

(b) OBSERVATIONS.

Work was done on the following:—

- | | |
|--|--------------|
| 1. Time of manuring of Sweet Potatoes on
2 different soil types | 1950-51 |
| 2. Time of manuring of corn on 2
different soil types | 1950-51 |
| 3. Planting of corn on banks <i>vs.</i> furrows | 1950 |
| 4. Onion Varietal | 1950-51 |
| 5. Methods of staking tomatoes | 1950-51 |

I. Time of Manuring Sweet Potatoes on a predominantly Fitches Soil Type.

Artificial manures were applied 8, 6, 4 and 2 weeks before planting, at time of planting, and 2 and 4 weeks after planting. Plots will be reaped in 1951.

2. Similar to I above but with maize on 2 different soil types. Plots will be reaped in 1951.

3. PLANTING OF CORN ON BANKS vs. PLANTING IN FURROWS.

Soil Type	 Fitches Clay predominant.
Planting time	 31/8/50
Harvested	 19/12/50
Yield during life of crop	 18.58 inches fairly well distributed.
Spacing	 $4\frac{1}{2}$ ft x 2 ft.
Fertilizer treatment	 At the rate of 2 cwt. sulphate of Ammonia and 1 cwt. Superphosphate (18% water soluble P_2O_5).

Considerable damage was done to this observation by stray cattle and prædial larceny was heavy.

Germination in the furrow was superior to that in banks and early growth was more rapid, but eventually plants on banks caught up and overtook those in furrows. Dry corn on cob at the rate of 1,211 lbs. per acre and 1,176 lbs. per acre were reaped from plants in furrows and banks respectively.

During the drier months of the year, relative results might have been different.

4. ONION VARIETAL. Three varieties:—Yellow Bermuda, Crystal White Wax and Red Creole were planted in December to be reaped in 1951.

5. METHOD OF STAKING TOMATOES.

(a) *Wire staking*. This type of support consisted of two tightly pulled strands of wire stretched between stout posts, one wire about 4 inches and the other about 54 inches above ground level. Opposite each plant, a bit of string is stretched between the lower and upper strand of wire and the plant is made to entwine itself around this string.

(b) *Trellis staking*. Trellises were formed by driving stout stakes about 2 inches thick and 5—6 feet tall securely into the ground opposite to each other at convenient intervals, pulling the tops of opposite stakes together to form inverted Vs and using these as the framework to support horizontal rods spaced 6—8 inches apart along the two outer sides of the inverted Vs. Tomatoes were planted on both sides of the trellis so formed.

Although the Trellis staking gave more support, the wire staking method was much cheaper. There was no appreciable difference in yields between the trellis staked and wire staked plants.

TOTAL FOOD CROP YIELDS.

Experiments, Field Trials and Multiplication plots.

Food Crops.	Acreage.	Total Yield.	Yield/Acre
Corn on cob ...	25.50	34,018	1,334
Yams ...	10.00	96,000	9,600
Sweet Potatoes ...	5.75	33,760	5,871
Tomatoes—marketable fruit ...	1.75	8,463	4,836
Onions ...	.40	4,269	10,677
Peanuts ...	1.55	2,517	1,624

Yields of yams and sweet potatoes were disappointing. The yam field was badly waterlogged during the heavy rains in September 1941 and never seemed to quite recover afterwards. (This field has since been properly drained).

The low yield of sweet potatoes was not unexpected: most of the crop came from a field in poor tilth from which an attempt was made to take a catch crop prior to its being ploughed again.

2. 10. TOBACCO. Seedlings of a Puerto Rico strain were raised under light shade and transplanted in the field in early December. A very satisfactory yield of 500 lbs. of dried leaf was obtained from .3 acres (*i.e.* at the rate of 1,613 lbs. per acre). The leaf was slowly dried indoors for about five weeks. A sample of the dried leaf was sent to the Colonial Products Advisory Bureau. Part of their conclusions are quoted hereunder:—

“The results of chemical examination showed that the composition of the tobacco was unsatisfactory in respect of the constituents that influence combustion and this is no doubt referable to shortcomings in the soil.....

The present sample showed some good features in its leaves but on the whole it would need a big advance in combustion flavour and appearance to be saleable in the United Kingdom.”

2. 11. CANE. Nurseries of new varieties for experimental work elsewhere were maintained but except for 1 manurial trial and the experiments with catch crops reported under “Food Crops” formal trials are carried out on estates. (Ref. Section 4).

Five hundred and eighty-three tons of cane were harvested from these nurseries and experiments. In the effort to make the Station Revenue earning, an area of approximately 80 acres have been established for the 1951 crop from which it is hoped to harvest close to 3,000 tons. The two hurricanes did severe damage to the older canes.

2. 12. CATTLE. NUMBER AND SEXES AS AT 31ST DECEMBER, 1950.

Grade Holstein bull	...	1
Pure Bred Red Poll Bulls	...	2
$\frac{3}{4}$ Red Poll x $\frac{1}{4}$ Senegal Bulls	...	1
$\frac{1}{2}$ " " x $\frac{1}{2}$ " " "	...	1
$\frac{3}{4}$ " " x $\frac{1}{4}$ " Bull calves	...	9
$\frac{1}{2}$ " " x $\frac{1}{2}$ " " "	...	2
$\frac{3}{4}$ " " x $\frac{1}{4}$ " COWS	...	4
$\frac{1}{2}$ " " x $\frac{1}{2}$ " " "	...	25
$\frac{3}{4}$ " " x $\frac{1}{4}$ " heifers	...	7
$\frac{1}{2}$ " " x $\frac{1}{2}$ " " "	...	6
$\frac{3}{4}$ " " x $\frac{1}{4}$ " heifer calves	...	10
$\frac{1}{2}$ " " x $\frac{1}{2}$ " " "	...	3
		—
		71
		—

Twenty animals (twelve bulls and eight barren cows and heifers) were sold during the year: three $\frac{3}{4}$ Red Poll bulls went to the Agricultural Department, Montserrat, and three to private persons in St. Kitts-Nevis: the others were sold in Antigua.

Figures for lactations completed in 1950 are given hereunder:—

Name of Cow.	Period of Lactation.	No. of days	lb. of milk
	From — To	in milk.	produced.
erial No. 3	... 2 3.49—17.1.50	322	2,776
eryl*	... 30.3.49—30.1.50	307	2,637 $\frac{1}{4}$
ertha	... 29.5.49—28.2.50	276	1,154
uchess	... 3.8.49—17.3.50	227	2,557 $\frac{1}{2}$
incess	... 9.8.49—28.2.50	204	3,108 $\frac{3}{4}$
anna	... 25.9.49—31.3.50	188	1,512
ar	... 8.10.49—22.4.50	197	2,125
len	... 18.2.50—30.8.50	194	2,064
eryl*	... 21.3.50—8.12.50	263	2,603 $\frac{1}{2}$

The nine lactations average 2,215 lbs. in 242 days.

This represents a serious drop on the lactations completed in 1949 which averaged 4,505 lbs. The reason for this decline is that several animals including some of the heaviest milkers gave evidence of disturbance of the endocrine system which impaired lactation and eventually caused ovarian troubles. Towards the end of the year, arrangements were made for an expert in fertility problems to investigate the basic cause of the trouble.

*Same cow.

2. 13. HORSES.

Number and sexes as at 31st December, 1950.

Pure bred stallion	1
Pure bred Brood mare	1
Native Brood mare	2
Pure bred fillies	1
Half bred fillies	3
	8

Two pure bred light draught French Canadian horses were maintained in good condition. The mare gave birth to a colt and was returned to the pure bred Kentucky Jack. She was in foal at the end of the year.

Two half-bred fillies were put to the Kentucky Jack: one aborted the other is schedule to foal early in 1951.

One native brood mare which had given trouble to breed in the past was apparently successfully mated. Another is now considered too old for breeding.

A pure bred light draught French Canadian stallion was sold to the Government Stock Farm, Trinidad, one colt to the St. Vincent Government and one to a private individual in St. Kitts. A half-bred filly was bought by a private individual in Guadeloupe.

2. 14. DONKEYS.

Number and sexes as at 31st December, 1950.

Pure bred American Jack	1
$\frac{3}{4}$ bred American Jack	2
$\frac{1}{2}$ bred American Jack	1
$\frac{1}{2}$ bred American Jenny	1
Grade American Jenny	1
	6

The pure bred American Jack was used on both horses and donkeys. One foal was born and one jenny aborted.

One Jack was sold to British Guiana and a jenny to the Agricultural Department, Montserrat. Another jenny was sold locally.

2. 15. SHEEP.

Number and sexes as at 31st December, 1950.

Pure bred rams	2
Pure bred ewes	2
Pure bred ewe lambs	2
Grade Ewes and ewe lambs	41
Grade Ram lambs	8
Native ewes	1
	56

The flock of Persian Blackheads continued to do well and are in great demand. Two pure bred rams and two ewes were imported from Africa: the ewes each gave birth to a ewe lamb soon after they arrived. Lambs sired by the pure bred rams started arriving towards the end of the year: they are nicely marked and appear vigorous.

Of all ewes lambed, 40% produced twins and 55% of the lambs were ewes.

2. 16. GOATS.

Number and sexes as at 31st December, 1950.

British Alpine Doe	1
British Alpine Buck	1
Native Doe	4
Female Kids	3
Male Kids	2
	11

One imported British Alpine Goat from Barbados completed its lactation during the year. Over a period of 401 days, it produced 2,175 lbs. of milk, milked 3 times per day.

It was decided during the year to enclose a hill-top area under natural bush and allow the animals free grazing in this area without any supplementary feeding: except about 3 ozs. of oats per mature goat (fed at night): milking to be discontinued for the time being until the flock had increased in size when selected animals would be milked once per day.

It was noticed that the health and appearance of the animals improved markedly under the new conditions: previously they were stall fed with a limited area for exercising.

2. 17. PIGS.

Number and sexes as at 31st December, 1950.

Sows (Berkshire)	2
Gilts	6
Boars	3
	11

Three litters of pigs, totalling 32, were farrowed during the year one sow having 2 litters. 11 of the piglets died: this high mortality was due to an insufficiency of nipples in the sows. Of those raised 9 were sold during the year.

2. 18. POULTRY.

Number and sexes as at 31st December, 1950.

Cocks — New Hampshire Reds	2
„ — White Leghorns	2
Hens — New Hampshire Reds	7
„ — White Leghorn	6
	17

Of the two breeds in the small unit maintained, New Hampshire stood up very much better than Leghorns. They were fed on cracked corn and oats (about 3 ozs. per bird per day) and allowed to range freely.

LAYING RECORD.

	<i>New Hampshire Reds</i>	<i>White Leghorns</i>	<i>Total</i>
Total Eggs laid during the year	535	439	974
Sitting Eggs Sold	417	326	743
Eggs Sold for eating	89	87	176
Average No. of laying hens	8	7	—

2. 19.

Summary of Animals sold from the Station during 1950.

Cattle	8 Bulls, 4 bull calves, 4 cows, 4 heifers
Horses	1 stallion, 2 colts, 1 filly
Donkeys	1 Jack, 2 Janets
Goats	3 bucks
Sheep	45 ewes and ewe lambs, 41 rams and ram lambs.
Pigs	7 Gilts, 5 boars.

2. 20.

Stud Services to outside Animals.

	<i>No. of Services.</i>
Canadian Stallion "Cemelon de Cap Rouge"	10
American Jack "Dan Kiger"	36
Grade American Jack "Windsor Lad"	12
British Alpine Buck "Black Bomber"	13

2. 21. HAYMAKING.

600 bales of hay (about 16 tons) were prepared from approximately 2 acres of hay grass. All operations except the feeding of the baling machine were done mechanically.

2. 22. DISTRIBUTIONS OF PLANTING MATERIAL.

These are included in distributions shown under para. 4. 8.

B. GREENCASTLE NURSERY AND FRUIT FARM.

2. 23. LAND USAGE AS AT THE END OF 1950

<i>Orchards</i>	<i>Approximate Acreage</i>
Grafted Mangoes (bearing trees)	4.00
Grafted Mangoes (young trees)	6.25
Citrus (bearing trees)	4.00
Other fruit (bearing trees)	.50
For orchards extension	2.50
<i>Propagating beds</i>	
Ornamental and economic plants	1.50
<i>Multiplication Plots</i>	
Cane*	10.00
Fodder	1.00
Food crops	.50
Ornamental Shrubs	.25
<i>Other Plots</i>	
Teak trees	.50
Permanent cane manurial	1.00
	32.00

*Owing to better conditions of rainfall, etc. than elsewhere, new varieties from the Central Cane Breeding Station, Barbados, are first planted and multiplied here. In addition, large plots of varieties recommended for commercial planting are maintained chiefly for distribution to the peasantry.

2. 24.

Practically all young fruit were blown off the trees during the two hurricanes in August and September but damages to the trees themselves was slight.

Most of the material in the nurseries were completely lost and the substantially built lattices providing shade for the nursery beds were blown away: unfortunately these were not covered by insurance.

The planting material distributed from this Station is included in para. 4. 8.

Section III.

SUGAR CANE INVESTIGATIONS.

3. 1. This work, sponsored by the Antigua Sugar Cane Investigation Committee, is undertaken in collaboration with the Department of Agriculture. The Department provides the senior supervising staff and observation plots and nurseries of new varieties are maintained. The bulk of the formal trials and observation plots are conducted on estates throughout the Island.

The following formal trials were reaped during the crop season 1950:—

Experiment.	Plants.	1st Ratoons.	2nd Ratoon
Variety Trials	10	9	6
Time of Planting Trials	4	1	2
"High" Nitrogen and Phosphate Trials	2	4	2
Short-Term Manurial Trials	—	—	1
Total	16	14	11

In addition, seven observation plots were reaped in which the late varieties were given preliminary tests against standard varieties. The object of this is to select, under local conditions, from a large number of new varieties received from Barbados, those which seem worthy of further trial and possible extension.

The results of the formal trials have been summarised and will be published by the Sugar Cane Investigation Committee in a Report entitled "Antigua Experimental Scheme—Preliminary Study of Yield Data from Experiments Reaped in 1950 by P. E. TURNER, E. R. MARTIN and L. A. WATKINS" and these will be widely circulated.

3. 2. The following recommendations are extracted from this publication:—

Soil Type.	Manures (cwt. p.a.)				Recommended Varieties (% of Replanted Area)							
	Plants.		Each Ratoon.		1949.				1950.			
	S/A.	Super*	S/A.	Super*	B 4098	B 37161	B 37172	B 4098	B 37161	B 37172	B 41227	B 3439.
Etherill Clays ...	2	1	2	1	100	...	...	100	...	...	...	...
Fitches Clay ...	2	1	3	1	100	...	...	100	...	...	...	...
Blubber Valley												
Light Loam ...	3	1	3	1	34	33	33	25	25	25	25	...
Gunthorpe Clay ...	2	1	3	1	100	...	...	100	...	...	...	...
Tomlinson Clay ...	2	1	2	1	50	50	...	100	...	...	...	...
Wendsey Clay ...	2	1	3	1	100	...	...	100	...	...	...	...
Woto Clay ...	2	1	3	1	100	...	...	100	...	...	...	...
"Ffryes" Clay ...					50	50	...	50	50	...	...	...
Blubber Valley												
Heavy Loam ...	3	1	3	1	50	...	50	75	...	25	...	...
Bendal Clay ...	3	1	3	1	80	...	20	100	...	...	...	...
Worke Clay ...					...	...	...	50	...	...	...	50

*18% water soluble P_2O_5 .

EXPERIMENTS WITH HEAVY APPLICATIONS OF NITROGEN AND PHOSPHATE.

Three series of experiments with applications of nitrogen and phosphate much in excess of the standard treatments have been reaped. Under the conditions of the experiments, it would not seem that paying gains can be obtained from the heavier applications.

TIME OF PLANTING OF STANDARD VARIETIES.

November is the standard time of planting. Recent experiments, however, indicate that the following areas may be planted earlier than November with advantage as follows:—

Soil Type.	Month.	Variety.
Fitches Clay (wetter areas)	Late Sept. or October	B4098
Blubber Valley Light Loams	October	B4098
"Ffryes" clay	Late September or October	B37161
Gunthorpe clay	" " " "	B4098
Bendal "	Late October	B4098

3. 3. Of the experiments reaped in 1950, those being continued as ratoons were manured and spring counts taken. Routine work was carried out on all experiments for reaping in 1951.

A new scheme of experiments, many of which were laid down to replace those badly damaged by the hurricane was presented to the Sugar Cane Investigation Committee, and was approved. The Scheme includes:—

- 10 Variety Trials.
- 3 Time of Planting.
- 3 Manurial Trials with Sulphate of Ammonia.
- 1 Trial with "High" Nitrogen and Phosphate.
- 8 Observation Plots with new varieties.

Of the above formal trials, 5 variety, 3 Time of Planting, 2 Manurial with Sulphate of Ammonia and 1 experiment with "High" N and P were planted before the end of 1950.

Section IV.

EXTENSION AND DEVELOPMENT WORK.

4.1. For purposes of extension and developmental work, the Island is divided into six districts with six Instructors and two Senior Instructors resident in the areas for which they are responsible. One additional Instructor is in charge of a mobile Soil Conservation Unit.

The duties of a District Instructor are at present as follows:—

- (i) Measuring plots, putting in boundaries, preparing sketch maps of Settlement areas (Government).
- (ii) Supervising repairs to Settlement roads and work on buildings and water supplies.
- (iii) Issuing warning notices and eviction notices to bad farmers, rent defaulters, and other undesirable tenants.
- (iv) Managing Demonstration and Stud Centres, Nurseries, Plots, etc.
- (v) Considering applications for credit, inspecting plots, estimating value of crop security, making recommendations on prescribed forms and checking work done (the majority of loans are issued in instalments on the basis of work done). This takes up most of an Instructor's time, but enables him to get into close contact with the people and to encourage good husbandry, soil conservation, etc.
- (vi) Preparing careful estimates of cane crops grown on Government Settlements for the Antigua Sugar

Factory and submitting information periodically as to varieties, etc.

- (vii) Making rough estimates of areas under other crops within the District—as required.
- (viii) Soil conservation work.
- (ix) *Protection work. Forestry and Cotton.* Instructors are required to report all breaches to the Senior Protection Officer who takes legal action, and to aim at preventing breaches by suitable propaganda.
- (x) *Cotton registration.* All growers are required by law to register with the nearest Cotton Officer (the District Instructor) who issues certificates of registration. The information given has to be recorded and should be checked before a vendor's licence is issued. Such a licence is necessary before seed cotton can be sold. In practice, it is seldom possible to check on every grower.
- (xi) Acting as Honorary Secretary (without a vote) to any Settlement Committee or Committees in the District.
- (xii) Organising and supervising the marketing of peasant's canes and (where there are depots) purchasing maize and seed cotton as required.
- (xiii) Giving miscellaneous agricultural advice and acting as guide, and friend to all peasants in the district and co-operating with estates as required.

4. 2. The work of the Land Settlement and Development Section of the Department has increased considerably during recent years both as regards quantity and scope without there being any corresponding increase in staff. In addition, the extension work of the Department is not now limited to settlements. Since 1948 much attention was given to small cultivators elsewhere, but it was not possible for the limited staff to meet all legitimate demands.

4. 3. *Land Settlements.* Given hereunder is a list of all the "Settlement" areas with which the Department of Agriculture and the Land Settlement and Development Board are concerned:—

<i>Settlements.</i>	<i>Total Area* (Acres).</i>	<i>Total Arable Acreage Occupied.</i>	<i>No. of Allot- ments.</i>	<i>Principal Feeder Villages or Town.</i>
1. Clare Hall	... 226	226	126	Clare Hall, St. John's, St Johnston's Village
2. Skerrets	... 100	61	19	St. Johnston's Village
3. Sawcolts	... 233	138	70	Sawcolts, Swetes
4. Wallings	... 430	134	39	Wallings, Sawcolts
Sub-Total A	... 989	559	254	
5. Piccadilly	... 3,000 (approx.)	853	499	English Harbour, Liberta, Falmouth, Bethesda
6. Matthews	... 729	445	165	All Saints, Swetes, Buckleys
7. Jonas	... 261	147	108	Freemans, All Saints, Pares
8. Greencastle (1)	... 544	491	99	Grays Farm, Grays Hill Hamilton, St. John's
Sub-Total B	... 4,534	1,936	871	
9. The Folly	... 22	20	22	Swetes, The Folly
10. Mannings	... 250	86	51	Freetown Newfield
11. Sherriffs	... 240	—	—†	
12. Indian Town	... 22	—	—†	
Sub-Total C	... 534	106	73	
13. Coconut Hall	... 257	153	106	Parham, Seatons
14. Southern Settlements	... 1,712	448	263	Old Road, Urlings
15. Northern Settlements	... 518	338	266	Cedar Grove, St. John's
16. (Rooms				
17. (Comfort Hall (part of)...	851	349	294	Willikies, Seatons
18. Brecknocks	... Unsurveyed	51	40	Sawcolts, Hamilton
19. Belvidere, Green- castle (2) etc.	... 1,635	822	432	Grays Hill, St. John's Grays Farm
20. Orange Valley	... 707	217	129	Crab Hill, Johnson's Point, Bolans
21. Glanvilles	... 256	172	115	Seatons
Sub-Total D	... 5,936	2,550	1,645	
Grand Total	... 11,993	5,151	2,843	

* Includes non-arable steep hillside, rough grazing, swamp, etc.
† Used for communal grazing.

Settlements 1—8 are under freehold tenure and most of the land on 1—4 has already been alienated. The given number of allotments is that at the time of alienation.

Settlement 9—21 are under leasehold tenure.

Settlement area 21 was purchased during 1949 from the Antigua Syndicate Estates Ltd.

All of 9—21 with the exception of The Folly, Mannings, Sherriffs, Brecknocks and Indian Town are owned by the Land Settlement and Development Board, a body corporate with executive powers defined by law. In addition to administering the properties which they own the Board is charged with the responsibility of administering all the unalienated settlements—the execution of work being done by the staff of the Agricultural Department.

SETTLEMENT BUILDINGS, ETC.

4. 4. Houses for staff were maintained at Belvidere, Coconut Hall, Marble Hill, Piccadilly, Clare Hall, Rooms and Cades Bay and buildings for use as district marketing depots at Cades Bay, Rooms, Clare Hall and Piccadilly. Two Community Halls are maintained at Coconut Hall and Cades Bay. Many of these buildings were badly damaged during the hurricanes. Major repairs were started during the end of the year.

Minor repairs were done to numerous settlement roads and “barricades”.

4. 5. TRACTOR PLOUGHING ON SETTLEMENTS. 136 acres were close ploughed: 123 of these were also banked.

4. 6. SETTLEMENT COMMITTEES. Committees elected by the settlers functioned in an advisory capacity at Coconut Hall, Southern Settlements, Rooms, Comfort Hall, and Glanvilles, Belvidere and Green-castle, Jonas and Matthews.

8 General and 32 Committee meetings were held during the year.

4. 7. IMPROVEMENT OF ESTATE AGRICULTURE. A close liaison continued to exist between the Department of Agriculture and most estates through the Sugar Cane Investigation Committee, The Antigua Cotton Growers' Association and the Agricultural and Commercial Society.

A scheme for the rehabilitation of estates is the responsibility of a Committee appointed by His Honour the Administrator of which the Director of Agriculture, Leeward Islands, is Chairman, and the Agricultural Superintendent, Antigua, Secretary.

Owing to certain local restrictions no new applications for assistance were approved after 1947 and issues were limited to already approved projects. During 1950, one issue for the purchase of machinery was made:—

<i>Sub-head.</i>	<i>Loan.</i>	<i>Grant.</i>	<i>Total.</i>
Purchase of Machinery ...	\$2,263.68	\$754.56	\$3,018.24

Issues and repayments from the commencement of the scheme up to the end of 1950 are as follows:—

<i>Subhead.</i>	<i>Loan.</i>	<i>Grant.</i>	<i>Total.</i>
(a) Purchase of Implements ...	\$57,746.88	\$19,196.16	\$76,943.04
(b) Assistance for Improvement ...	45,326.40	14,808.00	60,134.40
(c) Transport Expansion ...	17,520.00	5,841.60	23,361.60
(d) Livestock and Dairy ...	8,640.00	4,320.00	12,960.00

Repayments during the year totalled \$16,062.68 and since the commencement of the scheme \$51,399.68.

4. 8. DISTRIBUTION OF PLANTING MATERIAL. The following is a list of recorded sales and/or free distribution of plants and planting material from all departmental stations—i.e. Central Experiment Station, Greencastle Fruit Farm and Nursery, and District Stations:—

Cane cuttings (recommended varieties)	...	106,000
Onion seedlings	...	456,450
Tomato „	...	87,000
Cabbage „	...	78,725
Cauliflower seedlings	...	6,200
Beet „	...	3,275
Egg Plant „	...	2,625
Sweet Potato cuttings	...	1,012,500
Elephant Grass „	...	50,000
Guatemala „	...	3,500
Grafted fruit trees (Mangoes, Citrus & Avacado Pears)	...	258
Ornamental trees and shrubs	...	1,027

The above do not include any of the items listed under Section 2. 9.—Food Crops, some of which was used outside of the Central Experiment Station for planting purposes. They also do not include sales of seed from the Government Marketing Depot.

In addition to what was recorded as distributed, relatively large quantities of seedlings especially were stolen.

4. 9. SOIL AND WATER CONSERVATION. A total of approximately 356 acres were serviced by the Department Soil Conservation Unit. 60 acres at the Central Agricultural Station, 6 on estates and 290 on small holdings. Most of the work consisted of the laying down of earth bunds at 6 vertical intervals establishing close planting of Vetevier

Guinea Grass on these bunds and encouraging the cultivators to make their ordinary cultivation banks as far as possible parallel to these bunds. The greater part of the work on small holdings was paid for by Departmental funds.

In addition to that done by the Mobile Unit, conservation work was carried out as part of the routine of district instructors. This consisted chiefly of the maintenance of work already done, and advice as to banking, etc., but some new work was also carried out as required.

There has been an increasing appreciation of the need for soil conservation within recent years and it is estimated that at the end of 1950 there were over 3,000 acres that were in some measure protected.

Banking parallel to the main contour bunds is being fairly well done but great difficulty is being experienced in getting the peasantry to maintain live material (of no immediate economic value) on the bunds.

4. 10. FOREST CONSERVATION. There are very few acres of anything approaching true forest growth in the Island. By long custom, thick bush and anything denser is referred to as "forest". A "forestry" protection service was maintained. This consists of two Protection Officers (Forestry as well as Cotton Protection) and part time rangers as required. The object of the service is to prevent the denudation of steep slopes, consequent loss of soil and ground water, and the degradation of fertile soils on lower slopes by the admixture of poorer soils and toxic sub-soils brought down from bare slopes during heavy rains.

There were 19 convictions during the year for breaches of the "Forestry" Regulations. Fines varying from \$1.00 to \$5.00 were imposed.

4. 11. COTTON PROTECTION. Two Protection Officers (*see* Forestry above) part-time rangers and all Field Officers assist in this work. A close season was maintained from 1st June until 31st August.

During the year, \$2,529 exclusive of the salaries of permanent officers was spent on the destruction of wild cotton and enforcement of Close Season Regulations.

There were 85 convictions for breaches of the Cotton Protection Ordinance as against 27 in 1949. Fines ranged from 72 cents to \$5.00.

4. 12. LIVESTOCK IMPROVEMENT. Red Poll x Senegal bulls are kept at stud at Cades Bay, Piccadilly and Royals. In addition, 3 similar bulls sold conditionally at reduced prices to selected smallholders were at stud at Coconut Hall, Belvidere and Wallings.

"Large Black" boars were maintained at Cades Bay and Rooms, and a Duroc-Jersey at Piccadilly.

A British Alpine buck was kept at Clare Hall and a Black Hea Persian ram at Cades Bay.

The above are additional to those kept at the Central Agricultural Station and referred to under Section 2.

4. 13. PLANT NURSERIES. In addition to these already referred to at the Central Agricultural Station and Greencastle, cane nurseries for the supplying of recommended varieties were maintained at Matthews Orange Valley and Coconut Hall and Nurseries for the provision of vegetable seedlings at Piccadilly and Cades Bay.

4. 14. INSTRUCTIONAL. In August, an intensive course of Animal Husbandry was given at the Central Agricultural Station to members of the Field Staff, Leeward Islands, by Mr. J. C. Hotchkiss Assistant Agricultural Adviser, Colonial Development and Welfare assisted by the Chief Veterinary Officer and the Director of Agriculture.

This course was highly appreciated by the Staff and indicated the pressing need of formal training of subordinate staff.

A Mobile Cinema Unit owned by the Department gave 18 shows during the year: at each show, one or more films of agricultural interest were shown.

4. 15. BOARDS, COMMITTEES, ETC.

During the year, the Agricultural Superintendent served on the following:—

- As Chairman of the Land Settlement and Development Board.
- „ „ „ „ Sugar Cess Rehabilitation Fund Committee.
- „ Secretary of the Antigua Agricultural and Commercial Society.
- „ „ „ „ Estate Rehabilitation Committee.
- „ „ „ „ Treasurer of the Antigua Cotton Growers' Association.
- „ a member of the Sugar Cane Investigation Committee.

During the year, the Assistant Agricultural Superintendent served as Secretary of the Sugar Cane Investigation Committee and as Secretary of the Sugar Cess Rehabilitation Fund Committee.

SECTION 5.

MARKETING AND CREDIT.

5. 1. The following table reproduced (in part) from the 1951 "Report of a Committee appointed to enquire into the Organisation of the Marketing Branch of the Agricultural Department" indicates the total volume of business done by this section and the large increases which have taken place in recent years:—

MARKETING ORGANISATION: FINANCIAL SUMMARY 1948 — 1950

(\$'000s)				
<i>Activity</i>		1948	1949	1950
Loans issued under Head VII	...	24	54	116
Loans and interest recovered				
including C. D. W. Scheme	...	14	34	70
Cane payments (Head XXVII 2.)	...	96	163	240
Cotton payments (Head XXVII 1.)	...	15	227	510
Government Marketing Depot turnover	...	6	15	12
Packing materials store purchased	...	—	—	5
Marketing Commission and fees received	...	4	20	33
Rents collected	...	5	7	12

As in 1949 the staff proved quite inadequate on many occasions to deal with the volume of work in an eight hour day and much overtime work had to be done. The work has also greatly outgrown office accommodation and during peak periods when many hundreds of small-holders had to be served during a day conditions both for the staff and the public were most unsatisfactory.

5. 2. CREDIT.

Arrangements exist whereby assistance for approved agricultural and allied purposes are given to industrious small farmers who offer adequate first security in the form of an acceptable cash crop. Most issues are in the form of short term loans, repayable within a period not exceeding eighteen months but some medium and long term loans are given chiefly to assist small farmers to settle on their holding.

Loans are recommended on a prescribed form by field officers who also check up on the amount and quality of work done. Issues and collections are made by the Marketing Section.

Loans for general cultivation, tractor ploughing, etc. are issued (often in instalments) on the basis of specific tasks approved and supervised by an Agricultural Instructor. Fertiliser loans are given in kind and usually the greater portion of a housing loan is in the form of lumber, etc.

During the year, a total of \$120,922 was issued on 3,980 occasions as against \$53,455 on 3,267 occasions in 1949. Issues in 1945 amounted to slightly over \$10,000.

That the system is working satisfactorily is evidenced by the fact that loans repaid during 1950 amounted to \$73,000 which is well in excess of the \$53,455 issued in the previous year.

Interest on loans is collected at the rate of half cent per dollar per month. Interest collected during the year was \$3,057 as against \$1,043 in 1949.

This agricultural credit service now takes up a large proportion of the total time of the field as well as that of the clerical staff of the Marketing Section but as long as adequate supervision is maintained, it serves as a cheap but effective means of stimulating farmers to adopt methods recommended or approved by the Department.

The existing volume of credit, together with the rest of the work, taxes the existing staff to the utmost: with the result that supervision is not as close as is desirable.

5. 3. CANE.

28,816 tons were handled as compared with 19,011 in 1949 and 10,079 in 1948. The distribution between settlements and the gross proceeds are given below:—

<i>Settlements</i>	<i>Tonnage</i>	<i>Gross Proceeds*</i>
Clare Hall	992. 6. 3	8244. 37
Piccadilly	145. 4. 0	1187. 55
Cades Bay	406. 17. 1	3332. 77
Coconut Hall	455. 18. 1	3738. 97
Mill Hill & Follies	583. 19. 3	4878. 43
Matthews	3751. 14. 2	31335. 88
Sawcolts	639. 0. 3	5270. 30
Golden Grove	236. 8. 2	1941. 40
Belvidere	8106. 5. 0	68008. 77
Greencastle	6587. 3. 0	55114. 70
Rooms & Comfort Hall	1004. 9. 2	8200. 27
Orange Valley	2065. 17. 0	17110. 46
Marble Hill	1288. 3. 2	10732. 12
Jonas	2244. 9. 3	18740. 92
Mannings	308. 13. 3	2186. 81
	28816. 11. 1	240023. 72

5. 4. COTTON

The issuing of licences to private buyers of seed cotton was discontinued and the Marketing Officer became the sole purchaser. Estate growers and a few of the larger smallholders (supplying about 23% of the crop) continued to have their cotton ginned independently but all seed cotton going to the gins was inspected to ensure that no dirty damp or other undesirable cotton was exported. All shipments of clean lint were made to the Raw Cotton Commission, England, through the Marketing Officer who was also responsible for the distribution of the proceeds of sale.

* Gross Proceeds include 1949 Bonus paid in 1950.

The bulk of the crop was purchased in small lots from about 3,000 smallholders. They received a first payment of 16c. per lb. and a final payment of 6.7c. after all sales had been completed and expenses deducted. A revenue and expenditure statement is given below.

<i>Revenue</i>		<i>Expenditure</i>	
sale of Stained Lint 1949		By purchase of Peasants'	
Crop	\$ 2159.30	Cotton	\$431274.00
sale of Clean Lint 1950		Expenses	83448.16
Crop (A)	483471.79	(C)	
sale of Stained Lint 1950			
Crop	16130.24		
sale of Clean Cotton Seed			
1950 Crop	10093.99		
sale of Stained Cotton Seed			
1950 Crop	518.00		
sale of Cotton Seed			
Meal	462.96		
balance (B)	1885.88		
	<u>\$514722.16</u>		<u>\$514722.16</u>

(A) Includes grading fee of \$2,500.90 deducted in England.

(B) Includes (i) amounts due to Central Experiment Station, Central Cotton Station and the Land Settlement and Development Board in respect of cotton supplied by them in 1949 Crop and paid in 1950, and (ii) unpaid vouchers at the end of 1949 paid in 1950.

	\$
(C) Handling Charges	6965.54
Shipping Expenses	1215.93
Transportation	1522.91
Bags and Twine	1290.36
Export Duty and Cess	11970.04
Ginning and Bailing	28191.42
Interest on Overdraft	283.30
Insurance	3036.60
Adding Machine	240.62
Incidentals	590.57
Grading Fees	2500.90
Marketing Commission	23639.97
	<u>\$83448.16</u>

5. 5. FRUIT, VEGETABLES, SEED AND INSECTICIDES.

The sub-section was kept functioning throughout the year with a minimum of staff and maintained certain essential services *e.g.* retailing of seeds, insecticides, etc. When conditions were suitable some retailing of local produce was done but most producers naturally prefer to bargain for higher prices elsewhere, only offering produce to the Department when the market is glutted.

The Tables below give an indication of the extent of business done:

FRUIT AND VEGETABLES—1950 CROP.

<i>Revenue.</i>		<i>Expenditure.</i>	
To sale of Fruit and Vegetables ...	\$2,369.75	By Purchase of Fruit and Vegetables ...	\$1960
Stock in hand at 31.12.50	—	Expenses (A)	212
	<u>\$2,369.75</u>	Stock in hand at 1/1/50	32
		Balance (Profit)	163
			<u>\$2,369</u>

(A) Wages	\$205.60
Freight	4.80
Porterage	1.44
Incidentals	1.07
	<u>\$212.91</u>

IMPORTED VEGETABLE GARDEN SEED—1950.

<i>Revenue.</i>		<i>Expenditure.</i>	
To sale of seeds ...	\$2,581.96	By purchase of Seeds ...	\$1,950
Stock on hand at 31/12/50	78.62	Expenses (B)	209
	<u>\$2,660.58</u>	Stock on hand at 1/1/50	190
		Balance (Profit)	309
			<u>\$2,660</u>

(B) Wages	\$159.80
Transportation	11.19
Porterage	16.68
Incidentals	14.33
Insecticides	7.50
	<u>\$209.50</u>

INSECTICIDES AND FERTILISERS—1950.

<i>Revenue.</i>		<i>Expenditure.</i>	
To Sale of Insecticides, etc.	\$ 6,658.63	By Purchase of Insecticides, etc.	\$13129
Stock on hand at 31.12.50	11,934.12	Expenses (A)	173
Balance (Loss)*	3,846.42	Stock on hand at 1/1/50	9135
	<u>\$22,439.17</u>		<u>\$22,439</u>

(A) Wages	\$80.62
Freight	6.20
Porterage	.72
Incidentals	24.53
Transportation	61.80
	<u>\$173.87</u>

*443 bags of sulphate of ammon (value \$4,531.89) were lost during t hurricanes.

5. 6. CORN FACTORY. The machinery was in serviceable condition throughout the year. A notice in the press informed the general public that the equipment was available for the preparation of corn meal for State concerns or individuals but no use was made of this offer.

Small quantities of corn were cracked for the Central Experiment Station and private individuals.,

Section 6.

COLONIAL DEVELOPMENT AND WELFARE SCHEMES.

6. 1. *Scheme 465. B. Staffing and Other Requirements of the Department of Agriculture.* This was due to close on 31st December, 1949, but approval was given of a supplementary Scheme for a grant of £680 to cover expenditure for the first three months of 1950 pending approval of a new Scheme.

Total expenditure covering the existing period 1945—31st March, 1950 was \$161,905.

6. 2. *Scheme 1374.* Makes provision by a grant of \$229,200 for 5 years (up to 31st March 1956) for the services formerly provided under Scheme 465 B. referred to above.

Expenditure from April 1 to December 31, 1950 was \$25,665.38.

In connection with both of the above Schemes, progress is reported under Section 4.

6. 3. *Schemes D. 1313 and 1948.* Grants of \$13,603 and \$30,720 respectively were made to enable the Central Experiment Station to carry on following the expiry at 31.12.49 of Scheme 465 A. Central Experiment Station.

Expenditure over the year 1950 amounted to \$48,877.

Progress is reported under Section 2. A.

Section 7.

AGRICULTURAL LEGISLATION.

7. 1. The Milk Production Order 1950 (No. 40 issued under the Milk Regulations) prescribes the conditions to be fulfilled in order that any dairy may qualify to be licenced and the milk classified as Grade A.

No other legislation directly affecting agriculture with the exception of ephemeral orders *re* cotton close season, etc. was enacted during 1950.

C. A. S. HYNAM,
Agricultural Superintendent.

APPENDIX I. RAINFALL IN ANTIGUA—1950.

Place.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1. Antigua Sugar Factory	7.18	3.32	1.59	1.87	2.17	1.98	2.50	12.57	6.11	6.21	6.57	3.33	55.20
2. Betty's Hope	6.10	2.47	1.02	2.14	2.02	1.36	1.64	11.20	4.55	7.69	4.71	3.03	47.93
3. Blackmans	6.16	1.29	1.07	2.30	1.18	.93	2.14	6.93	5.59	7.50	2.82	2.21	40.12
4. Blakes	5.16	2.83	.91	3.17	1.39	1.33	.67	8.73	3.04	8.64	4.48	2.16	42.51
5. Blubber Valley	5.87	2.93	1.77	1.60	1.92	2.50	2.38	13.50	3.01	8.16	6.02	3.33	52.99
6. Burkes	6.43	2.08	1.61	2.58	2.08	2.22	1.51	14.87	6.00	9.05	5.36	3.48	57.27
7. Cassada Garden	4.77	2.85	1.05	1.86	2.09	.99	1.37	11.17	4.89	6.55	3.94	2.45	43.98
8. Cedar Valley	4.26	2.69	1.27	3.31	1.84	1.35	1.56	8.87	5.97	6.13	3.18	2.20	42.63
9. Clare Hall	7.17	6.95	1.00	2.14	1.88	1.54	1.25	9.78	5.50	4.90	4.13	2.24	48.48
10. The Cotton	6.28	1.23	1.16	3.18	1.18	1.06	2.15	7.99	4.02	6.46	5.29	2.04	42.04
11. Comfort Hall	5.33	1.18	.94	2.28	1.11	.91	1.20	8.29	2.32	8.37	4.57	4.21	40.81
12. Collins	4.52	2.20	1.09	1.54	1.82	.95	.96	10.16	3.29	7.34	4.27	2.96	41.10
13. Creek Side	5.69	2.19	.85	.61	1.43	2.31	2.19	9.41	2.94	5.47	6.75	2.97	42.84
14. Delaps	6.18	2.46	1.65	4.22	1.55	1.80	1.82	10.58	3.20	8.83	4.98	3.31	50.58
15. Donovans	5.71	1.84	1.16	2.28	1.75	1.33	2.07	8.72	4.02	6.66	4.12	2.45	42.11
16. Duets (Diamond)	6.20	2.26	1.08	3.07	2.40	1.29	1.27	11.47	4.95	9.26	5.32	3.38	51.95
17. Fitches Creek	6.80	1.96	1.23	1.88	2.22	1.27	2.31	13.57	5.84	7.91	3.77	3.65	52.41
18. Fhyes	6.18	2.85	1.40	2.08	1.61	1.98	1.28	10.14	3.85	8.02	3.59	3.11	45.82
19. Friars Hill	5.41	2.52	1.58	2.44	2.06	1.66	1.85	10.71	6.34	5.13	4.43	2.64	46.77
20. Gaynors	4.69	2.17	1.59	1.43	2.49	1.14	.68	12.20	3.97	8.90	3.65	3.57	46.48
21. Gilberts	5.46	1.26	.91	1.62	1.08	.86	1.46	8.58	2.98	7.66	6.02	2.91	40.81
22. Greencastle	7.50	2.95	1.54	2.20	2.03	2.67	2.39	13.05	5.34	6.01	6.05	2.32	54.05
23. Longfords	5.80	2.93	1.36	3.33	1.20	1.55	2.26	14.06	5.81	6.32	1.64	2.70	52.46
24. Long Lane	5.46	2.43	1.21	2.14	1.54	.90	1.08	8.30	4.21	7.87	3.58	2.54	41.26
25. Montpelier	8.27	2.29	2.13	2.06	2.11	1.93	1.86	12.15	3.76	9.79	4.32	3.83	54.50
26. Morris Looby	4.84	3.05	2.00	2.00	1.67	1.86	1.05	11.68	3.51	8.90	4.38	1.98	46.92
27. Cotton Station	4.58	2.92	1.47	4.36	1.95	1.55	1.99	9.53	7.59	4.11	3.78	2.88	46.75
28. New Division	5.38	3.57	1.60	1.71	1.82	2.91	2.28	9.46	2.14	6.10	6.54	1.97	45.4
Carried forward	163.88	71.67	37.24	65.60	49.59	44.43	47.17	297.51	124.57	203.91	131.26	79.85	1316.21

APPENDIX I—(cont'd)
RAINFALL IN ANTIGUA—1950.

Place.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Brought forward	163.38	71.67	37.24	65.60	49.59	44.43	47.17	297.51	124.57	203.91	131.26	79.85	1316.21
29. North Sound	6.57	3.70	.81	2.18	1.39	1.25	1.21	9.75	3.91	7.96	5.66	2.62	47.01
30. Pares & Cockranes	5.09	2.44	.88	2.20	2.33	1.09	1.28	10.47	4.20	8.86	4.90	2.88	46.62
31. Parrys & Diamond	6.20	2.26	1.08	3.07	2.40	1.29	1.27	11.47	4.95	9.26	5.32	3.38	51.95
32. Parham New Works	6.10	2.05	.95	1.82	1.35	1.05	1.70	12.95	3.95	6.10	6.70	2.77	47.49
33. Parham Hill	4.87	2.89	.70	3.38	1.59	1.72	1.98	16.50	4.71	7.57	6.63	2.15	54.69
34. Parham Lodge	6.70	1.39	1.12	3.23	1.23	.81	2.31	13.39	4.20	6.77	6.26	2.21	49.62
35. Paynters	6.19	1.84	1.04	1.94	2.07	1.24	2.04	13.56	6.70	5.50	7.19	2.87	52.18
36. Piccadilly	8.84	2.67	1.85	.58	1.02	1.11	1.27	14.86	5.75	8.92	5.95	2.28	55.10
37. Wallings Station	6.79	4.58	2.50	1.93	2.12	2.17	.97	10.24	6.45	7.66	6.46	6.14	58.01
38. Willis Freemans	5.14	1.90	1.69	1.83	1.21	1.98	.78	14.21	5.07	7.83	5.91	3.25	50.81
39. Yeptons	4.22	3.23	.94	.90	1.64	2.26	1.25	11.49	5.25	8.11	4.97	3.09	47.34
40. Yorks	5.44	2.57	1.05	1.33	1.61	2.06	2.01	12.66	2.82	6.71	5.70	1.79	45.75
Total (40 Stations)	235.53	103.19	51.85	89.99	69.55	62.46	65.24	449.06	182.53	295.16	202.91	115.28	1922.78
Means (40 Stations)	5.89	2.59	1.30	2.25	1.74	1.56	1.63	11.23	4.56	7.38	5.07	2.88	48.07
Means 1933—1950	3.01	1.50	1.41	2.06	3.70	3.30	3.30	4.62	5.33	5.43	5.75	3.11	42.52

APPENDIX II. RAINFALL IN ANTIGUA.

The average Rainfall (Annual) for the 60 years previous to 1933 was 43.47 inches.
Means 1933—1950.

No. of Stations.	Year.	Jan.	Feb.	March.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
59	1933	1.98	.92	1.07	2.62	4.69	2.60	5.28	1.87	8.40	3.04	6.18	2.85	41.50
60	1934	1.56	.64	2.05	.61	1.11	3.51	2.81	7.42	3.90	1.62	10.74	5.89	41.86
60	1935	1.33	1.15	.96	1.95	2.98	2.41	4.36	3.24	4.35	8.70	5.65	2.12	38.31
60	1936	1.65	1.26	.93	2.84	8.44	3.61	5.92	5.36	10.15	8.14	4.41	7.23	59.94
60	1937	8.54	3.07	.79	4.39	1.22	1.03	3.86	5.15	4.99	3.47	8.13	2.64	48.28
58	1938	2.07	.81	1.20	.61	1.06	11.58	3.10	6.39	3.00	3.95	8.41	2.67	44.75
59	1939	1.64	1.11	1.72	.25	.91	1.06	3.00	1.29	1.86	9.42	5.52	1.92	29.70
66	1940	3.41	3.09	2.13	2.41	4.31	2.71	2.15	3.04	3.04	2.41	6.79	1.88	37.37
66	1941	3.10	.71	1.63	2.10	12.77	3.49	3.02	4.07	5.25	2.95	8.06	2.22	49.37
56	1942	5.61	1.76	.55	4.43	2.62	4.45	3.39	6.57	2.67	4.53	10.56	2.81	49.95
54	1943	3.99	1.91	1.63	1.01	7.70	5.44	1.96	6.84	3.40	8.69	4.17	2.34	49.08
54	1944	2.99	1.32	.39	.55	2.83	3.84	6.46	4.53	4.40	5.69	3.48	1.55	37.13
55	1945	1.40	2.44	1.44	1.59	3.97	2.42	3.38	4.62	6.57	7.59	1.88	3.60	40.90
1946		2.12	1.09	1.93	4.53	3.21	1.97	1.32	3.76	5.29	2.32	4.68	4.89	37.11
49	1947	3.62	.50	.61	.94	3.77	1.50	2.57	1.68	7.42	4.46	1.00	.76	28.84
48	1948	2.44	.93	1.51	.90	2.55	3.98	1.86	2.28	4.64	7.02	5.28	3.92	36.41
48	1949	1.73	2.40	4.42	3.11	1.45	3.09	3.46	3.37	12.31	6.28	3.35	3.78	49.03
40	1950	5.89	2.58	1.30	2.25	1.74	1.56	1.63	11.23	4.56	7.38	5.07	2.88	48.07
Monthly means 1933—1950 ...		3.01	1.50	1.41	2.06	3.70	3.30	3.30	4.62	5.33	5.43	5.75	3.11	42.52

APPENDIX III.

SUGAR PRODUCTION—ANTIGUA.

Year.	Acres. Reaped.	Tons (Long) Grey Crystals.	Tons (Long) Muscovado	Average Yield Tons Cane per acre.	Tons Cane per ton Sugar.	Tons Sugar per acre.
1939	12,023	19,226	101	18.6	7.25	2.57
1940	12,669	14,113	—	9.8	8.58	1.1
1941	11,374	17,584	166	12.9	8.23	1.55
1942	11,703	21,979	193	16.5	8.71	1.89
1943	9,187	21,867	208	18.7	7.79	2.39
1944	8,525	16,279	125	14.3	7.47	1.92
1945	8,823	20,663	72	16.8	7.15	2.35
1946	9,560	26,024	122	20.7	7.57	2.73
1947	10,267	22,746	100	17.5	7.87	2.22
1948	8,782	12,174	—	11.5	8.32	1.38
1949	8,494	18,263	75	18.2	8.43	2.15
1950	11,800	30,681	422	21.3	7.88	2.64

APPENDIX IV.

VALUE OF IMPORTS OF CERTAIN COMMODITIES INTO ANTIGUA IN HUNDREDS OF
POUNDS STERLING (£ 00).

<i>Foodstuffs for Human Consumption</i>	1945—48 <i>Average</i>	1949	1950
Flour	890	812	895
Pulses	6	8	3
Rice	222	297	271
Cornmeal (Maize)	264	258	342
Bread and Biscuits	34	70	18
Butter and substitutes	140	355	144
Lard and substitutes	84	162	43
Edible Oils	149	134	261
Preserved Milk	32	58	45
Cheese	32	70	65
Preserved Meat	202	121	231
Preserved Fish	305	377	312
Fruit and Vegetables	133	46	44
Coffee	12	17	17
Tea	10	27	—
Cocoa	18	29	31
Sugar	70	7	2
Total	2,603	2,848	2,724

APPENDIX V.

PRINCIPAL EXPORTS FROM ANTIGUA IN HUNDREDS OF POUNDS STERLING

(£ 00)

<i>Commodity</i>	1945--48 <i>Average</i>	1949	1950
Sugar	3765	4223	9585
Molasses	107	—	625
Rum	87	36	8
Cotton Lint	168	1537	1346
Cotton Seed, Oil and Meal	—	34	33
Limes and Lime Products	—	8	—
Tomatoes	1	1	—
Coconut Products	—	—	—
Livestock	10	2	1
Hides and Skins	—	5	1
Other agricultural products*	—	16	—
	4138	5862	11599

*Includes forest products, fruit, vegetables and ground provisions.

APPENDIX VI.

Approved Financial Estimates—1950.

VII. AGRICULTURE AND MARKETING LOANS.

1. PERSONAL EMOLUMENTS.

Numbers.

1	a.	Agricultural Superintendent (\$2640-120-3360)	...	3,3
1	b.	Assistant Agricultural Superintendent (2160-120-2640)	...	2,6
1	c.	Marketing Officer (\$2160-120-2400)	...	2,4
1	d.	Principal	...	1,8
2	e.	Junior Agricultural Assistants (\$960-48-1440)	...	2,6
2	f.	Senior Clerks	...	3,0
9	g.	Junior Clerks	...	7,9
2	h.	Protection Officers (\$576-48-768-72-1200)	...	1,2
1	i.	P. O. Cl. II	...	5
3	j.	Market Masters	...	2
	k.	Cost of Living Allowance	...	3,8
	l.	Overtime Pay	...	4
23		Total Personal Emoluments	...	\$30,2

APPENDIX VI—(cont'd)

VII. AGRICULTURE AND MARKETING LOANS.

OTHER CHARGES.

		\$
2. Labour	...	11,668
3. Materials and Tools	...	3,080
4. Maintenance and Upkeep of Lorry	...	1,440
5. Distribution of Cotton Seed	...	48
6. Contribution to Sugar Cane Breeding Station	...	1,676
7. Printing, Binding, etc.	...	240
8. Rent of Storehouse	...	240
9. Books and Periodicals	...	240
10. Inter-Island Travelling Expenses	...	480
11. Maintenance, etc. Platform Scales	...	1,920
12. Anti-tubercular measures	...	24
13. Forest Demarcation Survey	...	24
14. Food Production	...	2,400
15. Maintenance Dipping Tanks	...	900
16. Insurance, Livestock, Vehicles, etc.	...	885
17. Loans and Advances to Peasant Farmers	...	72,000
18. Grant to Land Settlement and Development Board	...	15,240
19. Purchase of Engine	...	960
20. Depots	...	600
21. Transport Allowances	...	3,896
22. Pineapple Investigations	...	2,000
23. Extension Packing Shed Piccadilly and repairs to outstations and houses	...	3,672
24. Contingencies	...	672
25. Clerical Assistance	...	1,200
26. Telephone Subscription	...	101
Total other Charges	...	<u>\$125,606</u>
Total Head VII	...	<u>\$155,877</u>

Service.

1. XXVII. SELF-BALANCING ITEMS.

	Actual Expenditure. 1948.	Approved Estimates 1949.	Estimates 1950.	Comparison with 1949	
				Increase.	Decrease.
	\$	\$	\$	\$	\$
1. Purchase and marketing Peasants cotton (a)	...	192,000	300,000	108,000	
2. Purchase and marketing Peasants canes (b)	...	240,000	300,000	60,000	
3. Purchase and marketing Peasants Fruit and vegetables (b)	...	24,000	48,000	24,000	
4. Purchase of Packing Materials	...	2,400	4,800	2,400	
5. Purchase and marketing of corn	...	39,600	39,600		
6. Upkeep of Corn Factory	...	4,800	4,800		
7. Purchase and marketing Peasants Cotton, Barbuda...	...	12,000	10,000		2,000
8. Operations of Cotton Ginnyery, Barbuda	...	1,440	1,440		
9. Purchase of Seeds	...	1,920	2,880		960
10. Insecticides and Fertilizers (c)	...	11,440	19,200		7,760
11. Cotton Seed Farm	...	7,000	7,000		
Total Head XXVII	...	536,600	737,720	201,120	2,000

(a) Large cotton crop anticipated.

(b) Improved cane crop and vegetable crop.

(c) Replace stocks and purchase of fertilizers.

XXVIII. DEVELOPMENT & WELFARE SCHEMES.

Agricultural Development Scheme D. 465.

Provided by H.M. Govt. Estimate 1950.

	Full cost of scheme.	\$	\$
1. Central Experiment Station	...	576,000	576,000
2. Staffing and other requirements	...	153,600	153,600
3. Estate rehabilitation	...	254,400	254,400
Total Scheme D. 465	...	984,000	984,000

9,600

2,880

12,480

PART IV.

REPORT

OF THE

Agricultural Department,
St. Kitts, Nevis and Anguilla

FOR THE YEAR ENDED

31st December, 1950.

STAFF.

ST. KITTS.

<i>Agricultural Superintendent</i>	...	R. E. KELSICK
<i>Agricultural Assistant</i>	...	V. E. OSBORNE
<i>Manager, Bayfords Farm</i>	...	G. L. BELLOT
<i>Land Officer and Cotton Inspector</i>	...	C. L. WOODS
<i>Agricultural Instructor</i>	...	J. J. DOUGLAS (to 28th March)
" "	...	L. P. EVELYN (from 15th June)
<i>Junior Agricultural Instructor</i>	...	R. H. EDWARDS
" "	...	A. H. ADAMS
<i>Junior Clerk</i>	...	S. PAYNE (to 30th Sept.)
" "	...	C. HALBERT (from 1st Oct.)

NEVIS.

<i>Agricultural Officer</i>	...	S. H. ABBOTT
<i>Marketing Officer</i>	...	S. L. HENRY
<i>Senior Marketing Assistant</i>	...	F. B. ABBOTT
<i>Land Officer</i>	...	C. W. WILSON
<i>Cotton Inspector</i>	...	R. B. CLIFTON (from 17th April.)
<i>Agricultural Instructor</i>	...	R. A. HULL
<i>Junior Agricultural Instructor</i>	...	L. P. EVELYN (to 14th June)
" "	...	J. HANLEY
" "	...	E. NISBETT
" "	...	J. CLARKE
<i>Junior Clerk</i>	...	Mrs. J. RIVIERE (from 12th January.)

ANGUILLA.

<i>Agricultural Instructor</i>	...	V. F. BANKS.
--------------------------------	-----	--------------

Report of the Agricultural Department, St. Kitts, Nevis and Anguilla for the year ended 31st December, 1950.

SECTION I.
AGRICULTURE IN THE PRESIDENCY.
GENERAL CONDITIONS.

ST. KITTS. Rainfall during the first six months of the year was to the average and was slightly greater than the precipitation for the period of 1949 but was not as well distributed. During the second half of the year the rainfall was 5 inches above the average and slightly more than the rainfall for the same period of 1949. The distribution of rainfall during the second half of the year was much better than in 1949 when 19 inches of the total precipitation for this period fell in September. The mean rainfall for the island in 1950 is 59.73 inches which is 5 inches higher than the mean rainfall for the period 1914—50.

The mean rainfall for the year for 39 stations is given below and compared with the rainfall for the period 1914—50.

	1950 <i>Inches</i>	1914—50 <i>Inches</i>
January ...	4.71	3.61
February ...	5.36	2.19
March ...	1.89	2.43
April ...	2.15	3.33
May ...	2.94	4.29
June ...	2.66	4.10
July ...	2.71	4.72
August ...	8.67	5.57
September ...	6.46	6.58
October ...	8.49	6.51
November ...	7.35	6.87
December ...	6.34	4.40
Annual Mean	59.73	54.60

The Meteorological Report for 1950 is given as an Appendix to report.

A hurricane, which passed north of St. Kitts and Nevis on 31st August—1st September, caused minor damage to crops and fruit trees in the islands. This storm passed very close to or over Anguilla and did not cause serious damage to crops, livestock and to the houses of the population.

NEVIS. Weather conditions were favourable throughout the year although the rainfall was not quite as good as that of the previous year. The distribution was better and the precipitation in most districts was well above the previous five year average.

	Prospect		Cades Bay		New River	
	Average previous 5 years	1950	Average previous 5 years	1950	Average previous 5 years	1950
January ...	4.32	4.87	2.93	3.93	2.72	3.00
February ...	2.57	5.91	1.64	5.98	1.39	3.00
March ...	2.16	1.61	1.71	1.73	1.43	1.10
April ...	2.58	2.58	2.05	1.68	1.73	2.60
May ...	4.53	1.74	4.11	1.12	3.86	.80
June ...	3.54	2.70	3.05	2.62	2.72	3.40
July ...	4.49	3.05	3.59	7.26	2.53	3.00
August ...	5.47	7.00	4.91	7.88	3.38	7.50
September ...	8.37	6.84	8.16	9.72	6.90	5.20
October ...	5.58	10.00	5.19	6.48	4.87	5.30
November ...	4.96	4.07	5.11	6.57	4.30	1.80
December ...	4.20	2.86	3.32	3.32	2.90	5.20
Total ...	52.77	53.23	45.77	58.09	38.73	42.50

In both St. Kitts and Nevis there were several earthquakes in December. Very severe shocks were felt on the evening of the 27th December and on the afternoon of the 29th December. In both islands shocks of varying intensity were experienced daily from the 27th December for the remainder of the year.

ANGUILLA. The weather was very favourable during the year and the rainfall in the Valley district was the highest recorded for very many years. Unfortunately the island was very badly hit by a hurricane in early September. The monthly rainfall at the Agricultural Station (Valley district) is given below.

Month	Rainfall Inches	Days of rain	Highest rainfall
January ...	4.31	20	1.10 inch on 30
February ...	6.90	19	2.60 " " 6
March ...	.95	10	
April ...	3.97	11	1.16 " " 17
May ...	1.52	7	
June ...	2.13	5	
July ...	2.32	10	
August ...	5.97	11	2.60 " " 21
September ...	8.58	17	3.60 " " 1
October ...	9.70	17	3.70 " " 27
November ...	11.35	22	2.89 " " 17
December ...	3.39	13	1.75 " " 1
Total ...	61.09	152	

The rainfall at this station in 1950 is 10 inches higher than the rainfall of the previous year and some 20 inches higher than the average rainfall over a 15 year period.

LABOUR. Labour conditions were again very satisfactory during the year and work proceeded smoothly on the estates and at the St. Kitts (Basseterre) Sugar Factory during the whole of the crop period.

AGRICULTURAL INDUSTRIES.

SUGAR.

ST. KITTS. The cane crop of 1950 was grown under moderately favourable weather conditions in 1949. The rainfall in the latter half of 1949 was not well distributed as $18\frac{1}{2}$ inches of the total mean rainfall of the island fell in September. The mean rainfall of the island for 1949 was 62.15 inches which is 7.69 inches above the mean rainfall for the period 1914—50.

The harvesting of the crop was started on the 24th January and was completed on the 1st August. The output of sugar by the St. Kitts (Basseterre) Sugar Factory was 41,205 tons grey crystals of which approximately 1,420 tons were manufactured from canes supplied from Nevis. Sugar production exceeded by nearly 4,000 tons the best standing record crop made in 1939.

The St. Kitts (Basseterre) Sugar Factory purchased from growers in St. Kitts 334,714 tons of cane as compared with 292,160 tons in 1949 and 264,956 tons in 1948. The average yield of cane per acre was 54 tons as against 27.73 tons in 1949 and 26.81 tons in 1948. The average yield of sugar per acre was 3.56 tons as against 3.31 tons in 1949 and 3.15 tons in 1948. The sugar exported amounted to 38,646 tons valued at £1,120,102 as against 33,781 tons valued at £890,185 in 1949. 1,007,647 gallons of vacuum pan molasses valued at £23,343 were exported as against 1,067,807 gallons valued at £15,028 in 1949. The sugar was sold to the Ministry of Food at £27. 15s. per ton c.i.f. (27. 1. 7 per ton f.o.b.) plus £2. 15s. per ton to be held by the Government of the Presidency as special funds for Rehabilitation, Price Stabilization and Social Welfare.

The first payment for canes was 35/-8.60d. per ton. The Contractors' share of the surplus was 5/-6.23d. per ton making a total price of £2.85d. per ton of cane as against 35/-2.42d. per ton in 1949. Outside suppliers were paid 38/-9d. per ton of cane as against 32/-6d. per ton in 1949 and 32/-3d. per ton in 1948.

At the end of the year the 1951 crop was estimated at 43,000 to 50,000 tons of sugar.

The production for the past ten years is given in Table I.

TABLE I.
SUGAR—ST. KITTS.

Year.	Average rain-fall previous year. Inches.	Acreage reaped. Acres.	Tons of cane produced.	Tons of cane per acre.	Tons of sugar produced. Grey crystals 96°.	Tons of sugar per acre.
1941	54.37	10,178	290,210	28.51	37,186	3.60
1942	50.92	10,051	273,275	27.19	33,061	3.24
1943	81.53	9,063	262,933	29.01	32,161	3.52
1944	66.95	9,310	211,788	22.75	27,621	2.95
1945	53.02	8,581	225,029	26.22	28,548	3.32
1946	46.74	9,524	266,576	27.99	33,513	3.50
1947	37.95	10,718	280,054	26.13	34,357	3.10
1948	48.22	9,880	264,956	26.81	31,392	3.15
1949	50.24	10,534	292,160	27.73	35,667	3.31
1950	62.15	11,330	334,714	29.54	39,786	3.56

NOTE:—The weight of canes supplied from Nevis and the equivalent tonnage of sugar are included in the above figures.

For the 1950 crop the variety B. 37161 occupied 94 per cent. of the acreage harvested.

The figures for acreage reaped in Table I show that there has been a 15 per cent. increase in the acreage of cane harvested by the estates in St. Kitts since 1948. The acreage which will be harvested in 1951 is estimated at 12,000 acres—an additional 6 per cent. on the acreage harvested in 1950. It is unlikely that there will be any diversification of agriculture in St. Kitts so long as there is a guaranteed market for sugar at good prices as in this island natural conditions make cane growing one of the easiest agricultural undertakings in the world.

According to the Customs returns the exports of sugar, molasses and syrup during the period 1941—50 are as shown in Table II.

TABLE II.
SUGAR—EXPORTS AND VALUES.

Year.	Sugar.		Molasses.		Syrup.		Prices grey crystals per long ton f.o.b. £. s. d.
	Exports Long Tons.	Value. £	Export Imp. gallons.	Value £	Exports Imp. gallons.	Value. £	
1941	34,961	444,674	967,657	8,240	60,709	2,655	11. 10.
1942	23,461	235,417	559,238	6,069	—	—	13. 2.
1943	36,011	510,961	477	4	—	—	13. 15.
1944	27,593	418,485	306,331	4,220	—	—	14. 15.
1945	26,666	459,394	1,535,286	33,672	—	—	16. 19.
1946	30,739	599,435	679,820	15,576	—	—	18. 17.
1947	31,631	756,560	574,786	13,490	—	—	20. 15.
1948	30,448	819,031	947,255	21,348	—	—	23. 12.
1949	33,781	918,110	1,067,807	15,023	—	—	23. 12.
1950	38,646	1,120,102	1,007,647	23,343	—	—	27. 1.

NEVIS. The sugar cane crop was the largest harvested in Nevis for any years and the tonnage of canes shipped to St. Kitts was the best on record. It is estimated that approximately 1,200 acres were vested for the 1950 crop. The crop was disposed of as follows:—

Purchased for shipment to St. Kitts	 12,267 tons
Crushed at Hamilton & New River sugar works for manufacture of muscovado sugar (estimated)	 850 tons
Total production	 13,117 tons

In Table III information relating to production, marketing and use of canes is given for the past 10 years.

TABLE III.
SUGAR CANES INDUSTRY—NEVIS.

	CANES.				PRICES.			Weight of canes paid for by the St. Kitts Factory.	Loss (Nevis scales to weighing station at St. Kitts.)
	Quantity purchased for shipment to St. Kitts.	Quantity purchased for the production of Fancy Molasses.	Quantity used for the production of Muscovado sugar.	Total Production.	Price paid for canes shipped to St. Kitts.	Price paid for canes used in the production of Fancy Molasses.	Price paid by St. Kitts factory for Nevis canes.		
					s. d.	s. d.	s. d.		Per cent.
41	4,594	2,787	400	8,781	13 9½	13 9	18 3	4,357	5.2
42	3,849		900	4,749	13 4½		18 6	3,663	4.8
43	2,546		750	3,296	14 6½		20 0	2,404	5.6
44	1,349		600	1,949	16 7½		22 3	1,264	6.3
45	484		540	1,024	19 1		25 6	447	7.6
46	1,698		1,022	2,720	22 7		28 3	1,618	4.7
47	6,510		1,544	8,054	23 6		29 6	6,177	5.1
48	2,176		2,180	4,306	24 11½		33 3	1,998	8.2
49	6,544		530	8,974	25 11½		33 6	6,254	4.4
50	12,267		850	13,117	30 1		39 9	11,765	4

The price paid to growers for canes was \$7.22 per ton at the les. A first payment of \$5.90 per ton was made and a final payment \$1.32 per ton. Growers therefore received 99 cents per ton more their canes than for the previous crop.

COTTON.

The production for the 1949—50 season is given in Table IV.

TABLE IV.
PRODUCTION 1949—50.

Islands.	Acreage.	Clean lint.		Stained lint.		Total lint.		Yield per acre.	
	Acres.	Bales.	lb.	Bales.	lb.	Bales.	lb.	Clean.	Stained.
St. Kitts ...	830	297	106,786	85	32,328	382	139,114	129	39
Nevis ...	1,414	253	126,576	47	28,917	300	155,493	90	20
Anguilla ...	60	15	3,884	1	226	16	4,110	65	4
Total ...	2,304	565	237,246	133	61,471	698	298,717		

Production for the past ten years is shown in Table V.

TABLE V.
COTTON.

Year.	Area planted in Sea Island Cotton.				Total lint production.				Yield of lint per acre.		
	St. Kitts.	Nevis.	Anguilla.	Total.	St. Kitts.	Nevis.	Anguilla.	Total.	St. Kitts.	Nevis.	Anguilla.
1940—41	1,400	4,000	150	5,550	282,774	558,371	18,974	860,119	202	140	12
1941—42	1,530	4,500	225	6,255	188,173	610,825	30,557	829,555	123	136	13
1942—43	1,100	2,573	200	3,873	223,150	200,148	17,224	440,522	203	80	8
1943—44	342	2,544	70	2,956	59,439	302,982	4,503	366,924	174	119	6
1944—45	1,032	2,680	70	3,782	257,831	314,818	4,611	577,260	250	117	6
1945—46	860	1,688	60	2,608	158,716	305,045	4,222	367,983	185	121	7
1946—47	956	1,319	30	2,305	194,038	101,224	1,972	297,234	203	77	6
1947—48	333	1,668	60	2,061	73,434	246,792	2,608	322,834	223	148	4
1948—49	1,169	3,106	100	4,375	231,089	315,391	4,864	551,344	197	101	4
1949—50	830	1,414	60	2,304	139,114	155,493	4,110	298,717	168	110	6
Means ..	955	2,549	103	3,607	180,776	301,109	9,365	491,250	193	115	7

In St. Kitts there was a large reduction in the acreage under cotton, 830 acres being planted as against 1,169 acres for the previous crop. Very dry conditions at the time of planting and the continued expansion of the area under cane cultivation were the main reason for this reduction. In nearly all districts of the island the rainfall during the period March to June was too low for the satisfactory development of the plants. Poor growth of the crop and heavy infestation by the pink bollworm at the commencement of flowering of the plants were the factors responsible for the low yields which were general throughout the island. The yield of clean lint per acre was only 129 lb. as against 157 lb. for the

1949 crop. 23 per cent. of stains was obtained as against 20 per cent. in the previous crop, and 18 per cent. in 1948 and 11 per cent. in 1947. The clean lint was sold to the Raw Cotton Commission at 92 cents per lb. (f.o.b. St Kitts) for Grade I to 86 cents per lb. for Grade IV and below, with reduced prices for intermediate grades. 106,786 lbs. clean lint was shipped to the Raw Cotton Commission in December for which an average price of 89 cents per lb. was obtained. The stains were sold separately at 33 cents per lb.

In Nevis for the 1949-50 crop 1,542 growers planted 1,414 acres and obtained a better crop than in the previous season. Yields were slightly higher and the percentage of stains was considerably lower than in 1948-49 being 18.6 per cent. as against 42.6 per cent. for the 1948-49 crop. The better results are attributable to a more satisfactory 'clean up' of cotton plots and in consequence a lower infestation of pink bollworm. Considerable attention was also given by the Department to the destruction of small areas of wild cotton.

126,576 lbs of clean lint was sold to the Raw Cotton Commission at 84 cents per lb (f. o. b. Nevis) for Grade I to 75 cents per lb for Grade IV and below, with reduced prices for intermediate grades. The average price obtained was 81.5 cents per lb. The stains were shipped to the United Kingdom on consignment and were sold for 36 cents per lb.

Growers received a first payment of 17c. per lb. for clean seed cotton, an interim payment of 2c. per lb and a final payment of 5c. per lb. The total prices paid by Government to peasants for their cotton were 24 cents per lb. for clean seed cotton and 10.5 cents per lb. for stains. A final payment of 1.3 cents per lb. was also made in respect of stains produced in 1948-49 and which were not shipped until 1950.

It is estimated that growers have planted over 2,000 acres for the 1950-51 crop.

In Anguilla only a very small acreage of cotton was planted and yields were poor. At the ginnery of Messrs C. Rey & Co 11,656 lbs of clean seed cotton was purchased from peasant growers. 12 cents per lb. was paid for this cotton with a promise of an additional payment after the sale of the lint to the Raw Cotton Commission.

According to the Customs returns the exports of cotton lint, cotton seed, cotton seed meal and cotton seed oil during the period 1941-1950 are as shown in Table VI.

TABLE VI.

COTTON - EXPORTS AND VALUES.

Year.	Cotton Lint.		Cotton Seed.		Cotton Seed Meal.		Cotton Seed Oil.		Cotton Lint (clean) f.o.b. per lb.
	Exports lb.	Value £	Exports tons.	Value £	Exports tons.	Value £	Exports gals.	Value £	
1941	869,476	70,202	84	394	31	183	1,290	193	22½—23½
1942	805,704	72,293	...	...	11	67	2,481	453	...
1943	287,611	25,424	...	...	14	80	559	122	22½—24d
1944	492,316	47,564	...	...	13	96	665	168	...
1945	593,657	58,347	...	...	105	616	940	284	...
1946	269,477	17,113	2	75	6	47	2,624	779	19—24d.
1947	462,015	48,240	...	...	10	35	124	27	27—28d.
1948	246,468	30,801	...	...	12	133	135	51	34—39d.
1949	591,179	78,730	...	...	32½	273	1,933	689	37½—46d
1950	269,605	44,495	...	...	199	8,897	450	84	...

COCONUTS.

In Nevis two estates continue to make a small amount of copra which is exported to Barbados, but the greater part of the crop is sold locally as dry nuts. 39,104 lbs. of copra, 8,620 dry nuts and 3,300 water nuts were exported during the year.

FOOD PRODUCTION.

In St. Kitts the planting of food crops on the lower lands of estates has continued to be controlled under the provisions of the Vegetable Production (Defence) Control Order, 1942 and estates were again required to plant and cultivate vegetables to the extent of 20 per cent. of their total sugar cane acreage. The growth of food crops was handicapped by the dry weather during the period March to June and in consequence there was a shortage of ground provisions, chiefly sweet potatoes, at some periods of the year. More yams were planted on the estates than in the previous year but much more could be done in the production of yams. The owners and managers of estates do not pay sufficient attention to the crop which is cultivated by labourers on a share basis.

The small acreage of corn which was grown on the estates was planted late and proved a complete failure. Small acreages of English potatoes and blackeye peas were planted on some estates. The results of the offer by Government to purchase all surplus cob corn at \$4.00 per 100 lb. have been disappointing. Only 45,265 lbs. of cob corn was sent to the department and 27,534 lbs. cracked corn and cornmeal (chiefly cracked corn) was sold.

In Nevis locally grown foodstuffs were in short supply during the dry months of the year. During these periods bananas were an important

ant item of the people's diet. The response to Government's offer to buy all maize at \$4.00 per 100 lbs. on the cob was disappointing—only 4,645 lbs. of cob corn and 1,214 lbs. of grain were purchased. This crop was seriously damaged by dogs. Many of the ears were destroyed by these animals just as they were reaching maturity.

In Anguilla the pigeon pea crop was poor and much damage was done by the hurricane in September to other food crops. However fairly large acreages of maize, guinea corn and sweet potatoes were planted later in the year and did well.

LIVESTOCK.

In St. Kitts the reduction of the number of working animals on the estates has continued. A grade Jersey bull and nine grade Jersey heifers were imported during the year by the St. Kitts Sugar Association from Jamaica and were distributed among various estates. The animals arrived by freight plane. At the same time a similar number of Jersey cattle were imported by Government for the dairy farm at Bayfords.

In Nevis the livestock on the island kept in good condition during the year. The demand for meat animals, especially cattle, was far above the supply and it will be many years before this demand can be met.

The owners of two private estates are extending their herds to help meet this shortage and one of them has imported stud animals from Antigua and Barbados—a $\frac{3}{4}$ Red Poll bull from Antigua and a couple of African (Black Belly) ram sheep from Barbados.

44 mules, 14 donkeys, 14 horses and 2 pigs were exported from Nevis during the year.

The number of animals which were slaughtered in the public markets of St. Kitts and Nevis during the year is given below.

	<i>St. Kitts</i>	<i>Nevis</i>
Cattle	468	203
Sheep	1,435	701
Goats	857	756
Pigs	410	343
Total	3,170	2,003

In addition many animals are slaughtered in the country districts of both islands and no records of these are available.

41 cattle, 701 sheep and 444 goats were exported from Anguilla during the year and 138 cattle, 160 sheep, 160 goats and 502 pigs were slaughtered for food during the same period.

Section II.
WORK OF THE DEPARTMENT OF AGRICULTURE.

INVESTIGATIONAL WORK.

Sugar Cane.

Experimental work with the sugar cane crop was continued as in previous years and was carried out in co-operation with the St. Kitts Sugar Association and under the direction of Mr. P. E. Turner, O.B.E., M.Sc. F.R.I.C., Sugar Agronomist on the staff of the Comptroller for Development and Welfare in the West Indies.

22 varietal, 7 spacing and 4 manurial experiments were reaped during the year under the supervision of officers of the department. The St. Kitts Sugar Association had the results of the experiments printed and distributed to the managers of all estates at the commencement of the planting of the 1952 crop.

The following is a summary of the more important conclusions which have been drawn from the results of these experiments.

VARIETIES.

Varieties of the B34', B35', B37', B38', B40', B41', B43' and B44' series have been under comparison with the standard variety B37161 which occupied 94 per cent. of the harvested area in 1950.

B34' SERIES.

B34104 has continued to give higher yields of plant and ratoon cane and sugar than the standard variety B37161 on the wetter upper lands and the recommendation which was made last year for the planting of this variety on about half of these lands should be continued. On some estates it may be advisable to plant 75 per cent. of the area of wetter upper lands in this variety. The area under this variety in the middle lands of intermediate and high rainfall and in the upper lands of intermediate rainfall might be increased.

B37' SERIES.

B37172 has given ratoon yields inferior to B37161 on all areas where it has been tried.

B40' SERIES.

B4098 has given yields of cane and sugar no better than those of B37161 on the drier lower lands, wet lower lands, middle lands of intermediate rainfall and dry upper lands. This variety cannot be recommended for planting except on a very small scale, owing to its tendency to uproot under conditions in St. Kitts.

B41' SERIES.

B41211 has continued to give larger yields of plant and ratoon than B37161 in all rainfall zones of the lower lands and it is again commended that not less than 20 per cent. of the lower lands should be planted in this variety. B41211 has again given good yields in the upper and middle lands and some fields in all rainfall zones of these lands should be planted with this variety.

It has been found in Barbados that the reaping of the plant cane of this variety should be completed within three weeks of the leaves beginning to turn yellow otherwise the cane begins to rot.

B41227 should be planted on a moderate scale on the middle lands of high rainfall and the upper lands of intermediate and high rainfall in the wet areas of Barbados B41227 arrows profusely and this character should be watched.

B43' SERIES.

B4362 has given only fair results in the experiments reaped this season. It has again given juice of high quality in all experiments. Small fields are recommended for planting in all rainfall zones of the lower, middle and upper lands.

B43337 as a ratoon has given yields of cane and sugar as good as those of B37161 on the drier lower lands. On the lower lands of intermediate rainfall the yield of sugar has not been as good as that of B37161. This variety has given poorer yields than B41211 on the lower lands of dry and intermediate rainfall. On the middle lands of intermediate and high rainfall B43337 as a ratoon has given yields as good as B41227 and B4362.

B43391 has given poorer yields than B37161, B41211 and B41227 on lower lands of dry and intermediate rainfall and middle lands of intermediate and high rainfall.

B44' SERIES.

B4408 and B44278 have given promising results on the middle lands of intermediate rainfall.

B44182 has been found to uproot and is not likely to suit our conditions..

B4466 has given promising results on the dry and wet lower lands.

B44111, B4425, B44279, B4409, B44175 and B44254 have given poor results in all the experiments in which they were tried.

RECOMMENDATIONS FOR PLANTING, 1950.

Ecological area.		Recommended varieties (per cent. of area to be replanted.)					
Elevation.	Rainfall.	B.37161	B.41211	B.34104	B.41227	B.4362	B.43337
Lower Lands	Low	75	25	—	—	Nurseries	Nurseries
	Intermedi- ate	75	25	—	—	"	"
	High	75	25	—	—	"	"
Middle lands	Low	80	10	10	—	Nurseries	Nurseries
	Intermedi- ate	80	5	10	5	"	"
	High	80	5	10	5	"	"
Upper lands	Low	80	10	10	—	Nurseries	Nurseries
	Intermedi- ate	80	5	10	5	"	"
	High	45	5	45	5		

Mr. C. C. Stevenson, Cytogeneticist, British West Indies Central Sugar Cane Breeding Station, visited St. Kitts from the 18th to 22nd June to investigate the dying-out of ratoon stools of the variety B37161 which was stated to be serious by the managers of one or two estates on the windward side of the island. Mr. Stevenson issued a report on his investigations and in this one of his findings was that this variety continues to give excellent ratoon growth on most of the estates.

SPACING INTERVAL.

LOWER LANDS.

The results of this season's experiments have again confirmed that the distance between the rows of cane can be widened to 5½ ft. without loss in yield of plant cane, provided that in the drier areas the interval between the stools in the row is not less than 4 feet and that in the wetter areas continuous planting is practised in the row.

UPPER LANDS.

In one experiment on the wet upper lands it was found that the yield from the wider spaced rows with continuous planting was equal to the yield from the standard spacing.

MANURES.

HIGH NITROGEN AND PHOSPHATE.

On the recommendation of Professor F. Hardy, the effects on yield of plant cane and sugar of dressings to the acre of sulphate of ammonia up to 8 cwts. and superphosphate up to 8 cwts. have been under measure

in un-penmanured areas of the wetter upper lands. Basal dressings of potash and limestone were applied to all the experimental areas.

The results of plant cane experiments in 1949 showed only small and doubtful gains in yield from the use of dressings of nitrogen and phosphate heavier than the standard dressings. A similar result was obtained from the single plant cane experiment which was reaped in 1950.

The yields of the first ratoons in two of the experiments show substantial gains from the heaviest application of nitrogen and phosphate.

DISTRIBUTION OF CANE VARIETIES IN CULTIVATION.

In the following Table is given the distribution of varieties for crops harvested in 1930 and during the period 1943 to 1950. The figures are percentages of the total acreage harvested.

Variety.	Crop year.								
	1930	1943	1944	1945	1946	1947	1948	1949	1950
B37161 ...	—	0·07	5·63	30·80	56·96	73·00	84·69	92·93	94·29
B41104 ...	—	—	0·45	2·10	7·74	8·34	4·76	3·28	1·38
B439 ...	—	25·80	26·29	18·05	6·02	4·86	2·69	0·12	0·54
B5187 ...	—	0·40	2·14	5·55	7·70	4·63	1·14	0·52	0·09
B935 ...	—	54·68	47·57	26·29	9·70	2·58	0·61	0·31	—
H.10 (12) ..	69·50	17·00	15·70	12·23	6·98	2·41	1·21	—	—
C. 12/4 ...	17·40	—	—	—	—	—	—	—	—
B098 ...	—	—	—	—	0·10	0·70	1·93	0·46	0·30
B1211 ...	—	—	—	—	—	0·01	0·31	0·88	0·52
B3212 ...	—	—	—	—	0·05	—	0·11	0·06	—
B337 ...	—	—	—	—	—	—	—	0·06	—
B362 ...	—	—	—	—	—	—	—	—	0·01
B1227 ...	—	—	—	—	—	—	—	—	0·05
Unseeded ...	—	0·44	1·08	4·45	4·52	3·47	2·55	1·88	2·82

The figures in the distribution table show that there has been a further small increase in the acreage under B37161. Returns from the estates at the end of the year in respect of the crop to be harvested in 1951 show a small decrease in the acreage under this variety and a moderate increase in plantings of B41211.

COTTON SEED MULTIPLICATION.

As a result of the very dry weather during the period March to June a very poor crop was reaped from the 7 acre multiplication plot at La Guerite. 687 lb. clean lint was obtained and only 880 lb. seed was available for planting the second multiplication area in 1951.

It has been decided to obtain seed from Montserrat for planting the Nevis crop until it is possible to make satisfactory arrangements for the multiplication of seed in Nevis.

COTTON VARIETAL TRIAL.

The following is a summary of the results of the cotton varietal trial which was carried out at the Prospect Experimental Station in co-operation with the Cotton Officer at Antigua. The results of the experiment were analysed by the Cotton Officer.

<i>Strain.</i>	<i>1 lb. lint per acre.</i>
MSI	353
V4	283
VI	275
V3	243
B	242
V2	229
V135	217
N	206

(Critical difference: At 5% = 43.4 lb. At 1% = 58.3 lb).

The Cotton Officer made the following comments on the results:

1. MSI yields significantly more lint than any other of the varieties.
2. V4—a VH8—is a significantly better yielder than the closely related V2, but just fails to yield significantly more than the third VH8—V3.
3. VI—a VH10—out-yields V2 and the superfines V135 and N.

It is also noted that the strains MSI, B, and VI mature earlier than the other strains. The presence of the Pink Bollworm makes early maturity a very desirable character in any strain of cotton that is cultivated in the three islands of the Presidency.

Three cotton varietal trials are being carried out in Nevis in the 1950—51 season. They have been laid out at Prospect, Cades Bay and New River.

PROCESSING PLANTS OPERATED UNDER SUPERVISION
OF OFFICERS OF THE DEPARTMENT.

45,265 lb. cob corn was purchased at the cornmeal plant at La Guerite during the year. 26,579 lb. cracked corn and 955 lb. cornmeal were sold. 11,965 lb. cob corn was received from the estates for shelling and cracking for use as stock feed.

In Nevis 4,923 lb. cornmeal was prepared for peasants at the corn mill on the Hardtimes settlement and 689 lb. corn cracked for stock feed.

The muscovado works at Hamilton and New River were operated during the year. 340 tons of cane were crushed at Hamilton and 510 tons at New River. It is expected that a much larger quantity of canes will be ground at New River in 1951 as the area under this crop in the district has been increased since the chimney of the works was rebuilt.

EXTENSION WORK.

The Agricultural Assistant and all Agricultural Instructors in the residency attended a short course on animal husbandry at the Central Experiment Station at Antigua. The course was held under the direction of Mr. Hotchkiss, Adviser on Agricultural Education on the staff of the Comptroller for Development and Welfare in the West Indies.

During the year the Agricultural Assistant was engaged entirely on sugar cane experimental work. The death of Mr. John Douglas, Senior Agricultural Instructor, early in the year was a serious handicap to the work of the department. It was not possible to fill his post until June when an instructor was transferred from Nevis on promotion and the post at Nevis was vacant at the end of the year.

MARKETING AND CREDIT FACILITIES.

For the 1950 season 5,714 tons of cane were marketed for the allottees of the Fahies, Sadlers and Harris settlements. The total amount received for the cane crop of the three settlements was \$56,554.18 and the amount which was paid to allottees for canes put at the factory siding and backed in railway trucks was \$39,793.02. A statement of receipts and expenditure is published as an appendix to this report.

In Nevis the Marketing Department marketed cotton, sugar cane and maize for peasant cultivators and provided credit facilities for insecticides, artificial manures and planting material. Cash loans up to £3 for cane cultivation were granted to approved allottees on Government settlements.

The total receipts from sales of clean and stained cotton lint and cotton seed amounted to \$112,110.19 and marketing expenses to \$18,278.06. Receipts from sale of canes to the St. Kitts (Basseterre) Sugar Factory amounted to \$112,405.19. Statements of receipts and expenditure in connection with the marketing of peasants' cane and cotton are published as appendices to this report.

The Marketing Officer is also responsible for the operation of the Government Ginnery. For the 1950 season 126,576 lb. clean lint and 8,917 lb. stained lint were ginned and baled. Receipts amounted to \$7,279.51 and expenditure (excluding cost of management, depreciation charges & interest) to \$4,701.65.

The corn mill on the Hardtimes settlement was operated as in previous years.

The muscovado plants at Hamilton and New River are operated under the supervision of agricultural instructors. The muscovado sugar is used for local consumption.

SOIL AND FOREST CONSERVATION.

In St. Kitts 31,150 ft. of permanent contour bunds was established on Sadlers settlement in 1950, 10,770 ft. on Harris settlement and 650 ft. on Fahies settlement. There are only a few small areas on the settlements which have not been contoured and bunded with khus-khus grass. At Sadlers one of the nurseries of khus-khus grass has been cultivated and planted with Molasses grass (*Melinis minutiflora*). This grass does well on poor eroded slopes and is a good forage plant.

In Nevis main drains were opened and stone wall bunds kept in order. A short grass was also put in on one of the plots of the Hardtimes settlement.

In both St. Kitts and Nevis attention was given to the protection of forest areas during the year. In Nevis a Forest Guard and two Forest Rangers are employed to control the illegal cutting of timber and the burning of charcoal in the forest area. As the area is large control is difficult and illegal felling is still very prevalent. Unfortunately the fines which are imposed by the Magistrate on persons who are found guilty of having broken the forestry regulations are not sufficiently severe to have a deterring effect.

Thirty-eight permits for the felling of trees were issued and ninety-four permits for the burning of charcoal. Twenty-one persons were prosecuted for breaking the forestry regulations and eighteen convictions were obtained.

LAND SETTLEMENT.

Progress on the three settlements in St. Kitts—Fahies, Sadlers and Harris—was satisfactory during the year. On the Sadlers and Harris settlements there is evidence now of a greater willingness among the allottees to co-operate in matters affecting work on the settlements chiefly with the harvesting of the cane crop. Co-operation in this work must result in a reduction of harvesting costs to those allottees who take part and to an increase in individual incomes. Once the allottees realise that improvement of their financial position is the result of co-operation further efforts in co-operation in other directions such as the maintenance of settlement roads are likely to follow.

The amount of indebtedness on Government land settlement estates in Nevis at the end of the year was £616 2. 8. as against £781 12. 10. at the end of the previous year. There is no progress to report in the development of these estates.

The buildings at the Cades Bay settlement were totally destroyed by the earthquakes on the 27th and 29th December.

In Anguilla Landsome Estate was surveyed during the year and found to comprise 222 acres. 59 allotments have been rented on this settlement and the allottees have made a satisfactory start with the development of the area.

STUD ANIMALS ON GOVERNMENT SETTLEMENTS.

Two $\frac{1}{2}$ bred Holstein bulls and two pure bred Berkshire boars were in service at the settlements in St. Kitts during the year. The number of services by these animals during the year is shown below:

Bulls	...	59
Boars	...	53

One $\frac{1}{2}$ bred Holstein bull from the Bayfords Farm is stationed at the Pleaton Estate and the peasants in the district are making considerable use of the animal.

NEVIS. Both the $\frac{1}{2}$ bred Sahiwal bull and the $\frac{1}{2}$ bred Red Poll are now at Maddens for use in the Government herd there. These animals have some promising looking calves. Four heifer calves from the Low Ground Zebu herd have also been transferred to Maddens to be bred by the Red Poll bull. The $\frac{1}{2}$ bred stallion was transferred from Maddens to Hamilton.

The following figures show the number of services by the Government stud animals during the year:—

<i>Animal</i>	<i>No. of Services</i>	<i>Fee charged</i>
		\$ c.
6 Bulls	200	48
2 Sheep	44	12
3 Boars	81	12
3 Jacks	31	48
1 Stallion	6	2 40
1 Goat	26	12

The herds at Low Ground and Maddens consist of the following animals:—

	<i>Low Ground</i>	<i>Maddens</i>
Cows	8	15
Heifers	6	19
Bulls	1	2
Bull calves	1	3
Steers	1	13
	17	52

An electric fence was used very successfully at Maddens. The fences at both Low Ground and Maddens were in good condition during the year, but those at Maddens will have to be considerably extended and moved before the herd can be increased to any large extent.

With the exception of the Anglo-Nubian buck goat all the animals at the Agricultural Station in Anguilla were in good condition throughout the year.

LOOFABS.

Some attention was given during the year to the cultivation of Luffa plant. At the Experimental Station at La Guerite several plants were grown and these produced a large number of fruit. All the fruit were however on the small size and were all below 12 inches in length. As it is not known whether the local variety is *Luffa cylindrica* or not, varieties have been obtained from the United States Department of Agriculture for trial. Among the varieties is the Dishcloth Gourd

(*Luffa cylindrica*) from Japan where it is grown for commercial purposes. It is stated that the fruit of this species in the fresh state, when properly grown, is frequently over two feet in length.

DISTRIBUTION OF PLANTING MATERIAL.

The following planting material was distributed from the experimental stations in St. Kitts and Nevis during the year:—

Vegetable seeds	495lbs.
Vegetable seedlings	183,980
Cane cuttings	48,930
Ornamental trees & plants	421
Papaw plants	27
Grafted mango plants	33
Budded pear	7
Seedling lime plants	25
Guava plants	51
Maize seed (imported)	400
Sweet potato cuttings	84,650
Casava	3,500

CHEMICAL WORK.

449 samples of milk were analysed and flash point determined. 100 samples of kerosene oil for the Customs Department.

BOARDS AND COMMITTEES.

The Agricultural Superintendent is Chairman of the Land Settlement and Development Board of St. Kitts, an Income Tax Commissioner, member of the Sugar Industry Rehabilitation Fund Committee, member of the Forestry Board and of the Research Committee of the St. Kitts Sugar Association and Honorary Secretary and Treasurer of the St. Kitts Sea Island Cotton Growers Association Ltd.

In Nevis the Agricultural Officer is Chairman of the Forestry Board of that island.

COLONIAL DEVELOPMENT AND WELFARE.

NEVIS.

Scheme D. 1179—Facilities for marketing peasants' canes in Nevis

With funds provided under this scheme one 10 ton weighbridge scale was imported for use in connection with the marketing of peasants canes in Nevis.

Scheme D. 1511—Cattle Industry, Nevis.

This scheme was approved by the Secretary of State on the 27th December, 1950. A free grant of £19,120 has been obtained for the development of a cattle industry in Nevis.

ANGUILLA.

Scheme D. 687—Agricultural Development in Anguilla.

Some of the buildings and growing crops at the Agricultural Station were damaged by the severe hurricane which struck the island early in September. The buildings have been repaired and progress can be regarded as satisfactory.

STAFF CHANGES.

Mr. John Douglas, Agricultural Instructor, died early in the year after a short illness. Mr. Douglas had done very good work on the old settlement estates and by his death the department lost a valuable member of the staff.

Mr. L. P. Evelyn, Junior Agricultural Instructor, was transferred from Nevis in June to fill the vacant post in St. Kitts.

Mr. R. B. Clifton was appointed Cotton Inspector in April. Up to this time the duties of the post had been combined with those of the Land Officer.

R. E. KELSICK,
Agricultural Superintendent.

May, 1951.

Report on Government Livestock & Dairy Farm, Bayfords, for the Year ended 31st December, 1950.

METEOROLOGICAL.

The year was marked by the long drought which lasted from March until the end of July. During this period only 13.23 ins. rain fell. Two hurricanes were recorded, on 23rd August and 1 September respectively, but at Bayfords damage was comparatively slight. Late in December a series of earth tremors was felt.

Rain fell on 209 days, the greatest fall being 4.60 ins. on 1 September. The annual rainfall amounted to 66.98 ins. set out below:—

Jan.	3.66 ins.
Feb.	8.52 "
Mch.	2.05 "
Apr.	2.66 "
May	1.80 "
June	3.19 "
July	3.01 "
Aug.	8.78 "
Sep.	6.59 "
Oct.	10.72 "
Nov.	7.15 "
Dec.	8.85 "
Total	66.98 "

Rainfall for 1950 at Bayfords was 7.45 ins. above the average for the last six years, *i.e.*

1945	58.32 ins.
1946	46.70 "
1947	57.16 "
1948	54.75 "
1949	73.28 "
1950	66.98 "
Total	357.19 "
Moan	59.53 "

Highest Maximum temperature was 82° recorded on 1st, 29th and 30th September, while Lowest Minimum temperature was 58° recorded on the 14th January. September proved to be the hottest month, and January the coolest.

AGRICULTURAL.

From an agricultural point of view the year 1950 is best described as 'difficult'. First there was a long drought, to which reference has already been made, and this was followed by five months of ex-

ditional rains and strong winds. These factors upset cultivation and planting programmes, and planting was at times performed out of season with adverse results.

3½ acres was sown under maize early in the year, and this gave a good return when harvested four months later. ½ acre was planted under the same crop in August but this was totally destroyed by the hurricane of September. 2 acres planted in October germinated well but by the end of the year the plants were stunted and leaf colouration indicated a possible potash deficiency so they were cut and used as a stock feed. Two good crops of Sweet Potatoes were harvested during the year and used for feeding stock.

The vegetable garden was maintained throughout the year and a regular supply of fresh vegetables secured. These found a ready sale in the town. The fruit orchard was further extended and now contains the following fruit trees.

Mango—Julie.

Citrus—W. N. Orange, Seedling Orange, Grapefruit, Tangerine, Citron, King Orange.

Avocado Pear—Pollock, Dominica Seedling.

Banana—Cavendish Banana, Plantain.

One mango and two W. N. oranges fruited during the year but other trees are still young.

Five paddocks were ploughed and replanted under the following grasses:—

Two paddocks under Elephant grass.

Two paddocks under Elephant grass and Guinea grass

One paddock under Elephant grass, Guinea grass, Colonial grass, Rhodes grass and Barbados sour grass.

Nursery plots of the following are still maintained, and one or more are at present under trial for grazing:—

Guatemala grass

Rhodes Grass

Antigua hay grass

Barbados sour grass

Colonial grass

Molasses grass

Tropical Kudzu

Tropical alfalfa

Sweet sergium

Fernoxene, one of the 2, 4.—D weed killers, was used successfully in destroying a wild legume known locally as 'Black Bush'. Further trials with this weedicide in pastures are planned.

During the year a number of young trees were planted in paddocks for shade. These were of the Jamaica Shade Tree (*Pithecolobium Saman*).

CATTLE.

The herd total increased from 82 head, on 1st January, to 107 head on 31st December, a net increase of 25 head. This number is made up as follows:—

Bulls (pure bred Holstein)	...	1
„ (grades—3 yrs.)	...	2
„ „ —2 „	...	5
„ „ —yearlings	...	4
„ (calves)	...	11
„ ($\frac{7}{8}$ Jersey)	...	1
Cows (foundation)	...	21
„ (grade Holstein)	...	12
Heifers (grade „ 2 yrs.)	...	9
„ „ „ yearling)	...	14
„ „ „ calves)	...	18
„ „ Jersey)	...	9
Total	...	<u>107</u>

Seventeen animals left the herd which are accounted for under:—

Deaths	....	6
Destroyed	....	2
Sold for slaughter	....	6
Sold for breeding	....	3
Total	....	<u>17</u>

Additions to the herd numbered 42, namely,		
Births	....	32
Importations	....	10
Total	....	<u>42</u>

18 cows and 13 heifers calved giving a total of 32 calves (one cow calved twice during the period). 14 of these were bulls and 18 heifers.

5% and 56.25% respectively. The sires of these were,

	<i>Male</i>	<i>Female</i>	<i>Total</i>
Pabst Posch Ghandi	12	15	27
Ryedell's Assurance	2	2	4
Bayford's Edwin	—	1	1
Total	14	18	32

Birth weights of 31 calves were recorded. The bulls ranged in weight between 97 lb. and 57 lb., with an average weight of 73.96 lb., while the cows varied between 85 lb. and 52 lb. with an average of 67.09 lb. The average for bulls and heifers was 70.20 lb. One calf was average weight, and of the remainder one half were above and one half below average. At a glance it appears that calves born during the first half of the year were heavier than those born during the latter part. The herd average for 1950 was 2.4 lb. less than that for 1949. The difference may be due to the greater number of heifer calves born in 1950.

About the middle of September 10 grade Jerseys (1 bull and 9 cows) were imported from Jamaica by air. These animals, it is hoped, will form the nucleus of a grade Jersey herd for comparison with the grade Holsteins which have been bred at Bayfords since the herd was established some years ago.

The following are the stud services for the year:—

Pure bred Canadian Holstein	(Pabst Posch Ghandi)	25
„ English „	(Ryedell's Assurance)	24
Grade „ „	(Bayford's E-Sharp)	6
„ „ „	Edwin)	5
„ „ „	„ Farmer George)	3
„ „ „	Felix)	1
„ Jamaican Jersey	(Design's Pretty Chief)	4
	Total	68

Owing to the impracticability of obtaining direct shipments of semen from Jamaica to St. Kitts, the scheme for artificial insemination has been abandoned in abeyance.

Three cows went barren, and one heifer failed to breed. All these were disposed of for slaughter as was also a first calver which developed

sinus trouble. A yearling bull and two calves were sold for breed purposes, and two others that were not considered suitable for breed were sold for slaughter. The pure bred Canadian Holstein bull contracted what appeared to be tick fever and died in two days. Four calves and a heifer calf died from coccidiosis and worms while two calves were so badly cramped by cold and wet during the hurricane the 1st September that they had to be destroyed.

DAIRY, ETC.

A boiler shed was erected and certain alterations were made in main building to provide for a sterilising room. A "Wembly" boiler operating at a working pressure of 30 lb per square inch with evaporation rate of 100 lb. water per hour, was installed to supply steam and hot water for sterilising purposes. Steam is piped from the boiler shed into the adjacent sterilising room which contains the following items of equipment:—

- 1 Built-in-wall chest—48 cu. ft. capacity
- 1 Wash trough (double compartment).
- 1 Churn steaming stool.
- 1 Three jet steaming nozzle.

All dairy utensils are first rinsed in cold water, then washed in hot water to which a suitable detergent has been added. Rinsing in cold water follows, and the articles are then placed in the steam chest for sterilising. The built-in-wall chest makes possible and convenient for them to be removed in the dairy on the other side where they are placed on slatted racks for airing until required again for milking.

Total quantity of milk produced in 1950 amounted to 114,444 lb. or approximately 11,165 gallons (estimating that one gallon is equivalent to 10.25 lb). For purposes of comparison the output figures for two preceeding years are set out below.

	1948.	1949.	1950.
Milk produced	56,577 lb.	68,054 lb.	114,444 lb.

Testing of milk was again carried out by the Agricultural Superintendent twice a month, and the average butter fat content proved to be quite satisfactory. The following table sets forth the average composition of the milk produced on the Farm during the year.

COMPOSITION OF MILK.

Month.	Total Solids. %	Fat %	Solids not Fat. %
January ...	13.12	4.52	8.60
February ...	12.75	4.29	8.46
March ...	12.26	3.86	8.40
April ...	12.36	3.96	8.40
May ...	12.12	3.62	8.50
June ...	12.09	3.64	8.45
July ...	12.13	3.55	8.58
August ...	12.37	3.80	8.57
September ...	12.46	3.93	8.53
October ...	12.81	4.09	8.72
November ...	12.65	4.06	8.59
December ...	12.56	3.94	8.62
Means ...	12.47	3.94	8.53

The following tables summarise the results of lactations of adult cows and first calf heifers completed during the year:—

ADULT COWS.

Lactation Yields.	Number.	Percentage of total.
	<i>Cows.</i>	<i>Per cent.</i>
Under 1000 lb.	—	—
1000—2000 lb.	2	13.3
2000—3000 lb.	3	20.0
3000—4000 lb.	6	40.0
4000—5000 lb.	3	20.0
5000—6000 lb.	1	6.7
Over 6000 lb.	—	—
Total	15	100.0

Average lactation 3,296 lb. in 268 days.

FIRST CALF HEIFERS

Lactation Yields.	Number	Percentage of total
	<i>Cows.</i>	<i>Per cent.</i>
Under 1000 lb.	—	—
1000—2000 lb.	1	16.7
2000—3000 lb.	—	—
3000—4000 lb.	—	—
4000—5000 lb.	3	50.0
5000—6000 lb.	—	—
Over 6000 lb.	2	33.3
Total	6	100.0

Average lactation 4,377 lb. in 281 days.

The heifer whose lactation amounted to 1000 lb. was suffering from sinus trouble and had to be slaughtered. This factor undoubtedly affected her yield adversely. If her lactation is omitted from the above table the average lactation of 5 First Calf Heifers becomes 5,052 lb. in 315 days.

Details of 21 lactations completed during the year are set out below. The first 15 animals listed are "cows", and the last 5 are "first calf heifers". The term "Holstein" implies not less than three-eighths Holstein blood, and "Zebu" covers animals possessing marked Zebu characteristics. "Creole" cows are those whose ancestry are unknown and themselves possess no marked characteristics.

LACTATIONS OF COWS AND HEIFERS.

Cow.		Grade.	Yield lb. Milk.	Max lb. week.	Per cent. Fat.	lb. Fat.	Lactation days.
Beryl	...	Holstein	5,803	237	3.70	214.7	341
Connie	...	Holstein	4,477	223	4.27	191.1	345
Bertha	...	Holstein	4,293	210	4.08	175.2	297
Ellen II	...	Zebu	4,036	215	4.21	169.9	265
Celina	...	Holstein	3,890	183	4.14	161.1	332
Sally	...	Holstein	3,849	168	3.64	140.1	315
Belle	...	Creole	3,524	179	4.42	157.6	312
Lucille	...	Zebu	3,272	199	4.10	134.2	278
Young Girl	...	Creole	3,178	237	4.42	140.5	250
Rose	...	Creole	3,113	129	3.78	117.7	311
Mary	...	Creole	2,968	161	4.05	120.2	231
Margaret	...	Zebu	2,523	181	4.53	114.3	229
Emily	...	Zebu	2,230	144	5.32	118.6	205
Bronte	...	Creole	1,189	125	4.47	53.2	192
Lizzie	...	Zebu	1,063	95	4.28	45.5	120
Dora	...	Holstein	6,531	220	3.37	220.1	333
Dairy Maid	...	Holstein	6,089	183	3.71	225.9	347
Delina	...	Holstein	4,466	156	4.09	182.6	304
Delores	...	Holstein	4,119	180	3.68	151.5	293
Eve	...	Holstein	4,057	158	3.73	151.3	299
Dottie	...	Holstein	1,000	135	5.47	54.7	108

EQUINES.

The mare foaled with a filly foal in February sired by the former Canadian horse, and was bred to a racehorse some months later. At the end of the year the total equine population numbered three, namely,

- 1 Brood mare.
- 1 Filly foal.
- 1 Mule.

There were no outbreaks of colic, and the above animals enjoyed health throughout the period covered by this report.

GOATS.

A pure bred British Alpine buck goat stands at stud at Bayfords, and should be replaced in the near future so as to avoid inbreeding. He was dewormed and dipped at regular intervals and thus enjoyed good health.

Stud services numbered 25 which were distributed as follows:—

March Quarter	....	—
June	„	7
Sept.	„	4
Dec.	„	14
Total	....	25

PIGS. Seven litters of pigs were born giving a total of 47 piglets. These were all born alive but 6 died when quite young. The following table gives details of each litter:—

Litter No.	Males.	Females.	Deaths.	Litter Total.
1	3	3	—	6
2	3	5	3	11
3	1	1	—	2
4	2	5	1	8
5	5	3	1	9
6	2	3	—	5
7	2	3	1	6
Totals.	18	23	6	47

A gilt proved barren and was slaughtered and one of the old sows died. Two gilts were purchased for replacement and on 31st December the breeding establishment was:—

Berkshire boar	(English)	1
„	(Canadian)	1
„	„	3
„	„	1
„	(Grade)	1
Berkshire/L. Black sows		2
„	„	2
Total		10

POULTRY. Eggs produced during the year amounted to 1,829 which are accounted for as follows:—

Sold for eating	1250
„ „ hatching	376
Incubated on the Farm	100
Broken, eaten by rats etc.	103
Total	1829

A total of 100 eggs incubated gave 38 live chickens. The majority proved to be cockerels and were disposed of while the remainder were held for replacements. Many of the 65 birds which were on the Farm at the beginning of the year were culled by reason of age etc., and at 31st December the total number of birds was 26, divided into three pens each containing 7 hens and a cock, with two reserves.

The poultry were almost entirely free from any disease. A single case of what might have been leucosis was found, and the bird, a cock was destroyed.

G. M. BELLOT,
Farm Manager.

APPENDIX I.

PRINCIPAL EXPORTS FROM ST. KITTS, NEVIS AND ANGUILLA.

Commodity	1938		1948		1949		1950	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Sugar (tons) ...	26,481	204,835	30,448	829,352	33,781	918,110	38,646	1,120,102
Molasses (gals.) ...	600,828	8,770	947,255	21,348	1,087,807	15,023	1,007,647	23,344
Tomatoes (crates of 20lb)	2,921	445	...	...	...	...	...	...
Cotton Lint (bales of 400 lb) ...	1,824	45,193	616	30,801	1,478	78,730	674	44,495
Cotton seed, meal, cake and oil ...	...	1,204	...	184	...	962	...	1,877
Coconuts and coconut products ...	...	349	...	453	...	1,569	...	2,238
Livestock ...	...	1,309	...	1,404	...	1,366	...	3,356
Hides and Skins ...	...	230	...	1,231	...	792	...	661
Other Agricultural products ...	...	430	...	474	...	861	...	261
Salt (Brls. of 300 lb) ...	26,947	3,240	32,936	12,633	38,561	15,356	43,609	17,391
Total ...		266,005		897,881		1,032,769		1,213,719

APPENDIX I—(cont'd).

Value of Imports of certain Commodities into St. Kitts, Nevis and Anguilla in hundreds of pounds sterling (£ 00).

Foodstuffs for human consumption.	1938	1948	1949	1950
Wheaten flour ...	270	1,343	820	1233
Beans ...	4	51	47	19
Rice ...	113	169	214	283
Cornmeal (maize) ...	58	157	155	227
Bread and Biscuits ...	22	38	35	58
Butter and Substitutes ...	78	127	193	202
Hard and Substitutes ...	56	99	100	108
Edible oils ...	10	9	30	60
Condensed milk ...	2	68	51	171
Cheese ...	11	52	63	70
Condensed meat ...	63	252	279	401
Condensed fish ...	66	264	332	441
Fruit and Vegetables ...	24	83	82	96
Coffee ...	6	20	16	30
Tea ...	6	14	13	23
Cocoa ...	9	31	30	53
Sugar ...	43	123	58	57
Total ...	841	2,900	2,518	3,532
ANIMAL FEEDING STUFFS ...	39	46	51	86
FERTILIZERS ...	185	430	431	714
FERTILIZERS (Volume in tons) ...	2,665	2,237	1,944	2,731

APPENDIX 2.

Statement of Receipts and Expenditure in connection with the marketing of peasants' cotton in Nevis for the 1949—50 crop.

CLEAN LINT.

	Receipts.	Expenditure.
	\$	\$
To amount brought forward from 1948—49	2596.72	
By expenses in cotton house		638.
temporary staff		411.
fire insurance		210.
portorage		103.
incidentals		20.
cess		1265.
export duty		1265.
pier dues		457.
lighterage		203.
advances on 379,141 lb seed cotton @ 17c. per lb.		64453.
advances on 379,141 lb seed cotton @ 2c. per lb.		7582.
fee to grader in U.K.		324.
seed purchased from growers		107.
ginning and baling 123,058 lb lint @ 4½c.		5537.
rent of Government warehouses		636.
purchase of bags		468.
balance due on seed imported from Montserrat for planting in 1949		401.
printed forms from Trinidad		56.
marketing commission 2% of gross proceeds		2076.
To sale of clean lint in U.K.	100290.72	
sale of prime seed to Spooners Factory 177,466 lb @ \$30 p.t.	2376.78	
sale of seed for planting	1013.11	
sale of seed to Nevis Ginnery 5 tons	150.00	
By final payment @ 5c. per lb seed cotton		18957.
amount carried forward		1245.
	<u>106427.33</u>	<u>106427.</u>

APPENDIX 3.

Statement of Receipts and Expenditure in connection with the marketing of peasants' cotton in Nevis for the 1949—50 crop.

STAINED LINT.

	<i>Receipts.</i>	<i>Expenditure.</i>
	\$	\$
To amount brought forward from 1948—49 ...	224.74	
By freight on baled cotton to U.K. ...		710.64
pier dues ...		84.60
lighterage ...		37.60
portorage ...		18.36
fire insurance ...		43.08
expenses in cotton house ...		129.14
temporary staff ...		87.62
purchase of seed from growers ...		16.46
rent of Government warehouses ...		131.56
purchase of bags ...		96.03
incidentals ...		5.43
ginning and baling ...		1185.00
advances on 63,551 lb. seed cotton @ 2c. ...		1271.02
expenses on cotton in U.K. ...		85.64
marketing commission ...		185.85
To sale of 23,500 lb. in U.K. ...	8460.00	
sale of 55,134 lb. seed to Spooners Factory ...	369.20	
sale of lint locally ...	463.49	
By final payment on 63,551 lb. seed cotton @ 8.5c. per lb. ...		5401.84
amount carried forward ...		27.56
	<u>9517.43</u>	<u>9517.43</u>

APPENDIX 4.

Statement of Receipts and Expenditure in connection with the marketing of canes from Nevis for the 1950 crop.

	<i>Receipts</i>	<i>Expenditure</i>
	\$	\$
First payment on 12,267 tons 2 cwts. 2 qrts. 14lbs canes @ \$5.90 per ton		72,376.06
Shipping expenses		4,561.44
Porterage on chains, slings & trucks		17.40
Lighterage " " "		18.00
Wages of clerical assistance		718.17
Supplies & Incidentals		37.89
Wages of night watchmen on pier		170.50
Rent of land at Newcastle		8.00
Lighterage on canes to St. Kitts		12,967.47
Truckage of canes from Newcastle		541.14
Truckage of canes from Newcastle to Charlestown (Govt. trucks)		3,523.80
Expenses making syrup from stale canes		119.04
Payments for 11,764 tons 10 cwts 3 qrs canes by St. Kitts (B/terre) Sugar Factory	112,233.62	
Sale of syrup	171.57	
Final payment to growers 12,267 tons 2 cwts 2 qrs 14 lbs canes @ \$1.32 p.t.		16,192.61
Marketing Commission 1% of gross proceeds		1,124.05
Excess receipts		29.62
	112,405.19	112,405.19

APPENDIX 5. Return of Rainfall in St. Kitts for 1950.

Inches.

Station.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Fabies	6.88	5.49	4.04	4.74	7.12	4.49	6.24	12.07	6.90	10.92	11.76	6.83	87.48
Wingfield	7.15	5.70	2.05	3.15	2.60	3.30	5.15	11.80	7.05	13.40	8.49	8.43	78.27
Belle Vue	4.26	5.32	3.22	3.89	8.31	2.53	1.95	13.12	10.31	10.11	8.56	6.52	77.30
Mansion	3.86	5.35	1.86	1.60	3.79	3.07	2.54	9.90	10.27	10.89	7.25	10.78	71.16
Parsons	3.11	6.96	2.82	2.60	6.20	2.59	2.30	9.95	13.15	8.01	8.98	5.38	71.05
Stapleton	5.38	7.43	1.15	1.77	1.30	3.07	2.80	9.40	8.63	10.90	10.25	7.84	69.92
Harris	4.31	5.14	2.18	3.36	7.44	2.55	2.66	10.79	7.30	8.72	8.18	6.27	68.90
Molinueux	4.23	5.17	1.61	3.01	3.69	2.35	2.48	9.63	8.91	9.46	7.24	10.43	68.21
Estridge	4.11	5.88	1.60	2.40	4.49	2.70	3.33	10.42	9.15	8.66	6.37	8.52	67.63
Bayfords	3.66	8.52	2.05	2.66	1.80	3.19	3.01	8.78	6.59	10.72	7.15	8.55	66.98
Milliken	5.07	8.25	2.16	1.73	2.07	2.86	2.56	9.17	7.15	9.18	7.90	8.29	66.39
Saddlers	3.90	4.59	2.04	2.96	7.25	2.22	2.32	10.29	7.12	8.53	7.51	5.58	64.31
Lodge	4.60	6.30	2.03	2.79	3.16	2.99	2.17	6.87	8.55	9.30	6.40	6.80	61.96
Belmont	4.61	4.24	2.48	2.54	4.40	3.25	3.40	9.35	6.77	8.00	8.67	4.24	61.95
Willets	3.25	3.66	2.66	3.95	5.74	3.19	2.81	9.89	4.38	7.83	9.81	4.05	61.22
Caines	3.96	4.84	1.97	2.70	6.77	3.73	0.66	10.45	7.36	5.12	11.36	2.67	60.99
Mills	4.16	5.06	1.59	1.62	3.17	2.61	2.45	8.63	7.97	7.46	4.95	11.06	60.73
Bourkes	7.73	3.41	2.56	2.15	0.88	2.43	4.56	10.58	5.13	8.04	5.46	6.10	59.06
Brighton	3.76	5.08	1.67	3.19	3.37	2.37	2.44	7.07	7.98	7.93	5.43	8.71	59.00
Whites	5.33	5.82	1.15	1.69	1.73	2.64	2.73	6.34	6.51	9.49	7.05	8.40	58.88

APPENDIX 5,—(Cont'd.)
Return of Rainfall in St. Kitts for 1950.
Inches.

Station.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Shadwell	...	7.62	1.77	1.35	1.17	2.74	2.54	8.72	5.76	9.51	6.94	4.94	58.75
Camp	...	5.79	1.75	1.66	0.85	2.53	2.18	8.31	5.14	8.56	8.12	5.01	56.38
On Phipps	...	3.89	2.47	1.76	1.10	2.22	4.57	9.99	3.47	8.26	5.55	6.73	55.94
Brothersons	...	3.60	3.34	3.25	3.57	3.97	3.76	10.74	3.85	7.13	5.72	4.55	55.36
Cransious	...	4.33	4.57	2.63	1.33	2.53	4.01	8.99	5.38	7.49	5.43	6.15	55.33
L. Bouryeau	...	4.33	1.32	1.26	2.53	2.64	2.42	5.91	7.06	7.53	5.40	10.40	54.56
West Farm	...	5.54	1.41	2.01	1.09	2.58	2.71	9.71	4.48	7.06	6.04	4.89	53.97
Pond	...	4.33	1.66	1.58	0.96	2.73	1.93	6.81	5.70	13.44	4.21	4.92	53.79
La Guerite	...	6.12	1.60	1.24	0.86	2.48	2.03	8.27	3.74	9.61	7.55	4.11	52.89
Douglas	...	5.57	1.54	0.95	1.15	3.15	1.74	7.03	5.00	7.63	8.67	4.35	51.90
New Guinea	...	3.57	2.38	1.55	0.67	1.70	5.20	8.37	4.03	6.85	5.16	5.98	51.38
Olives	...	5.76	1.34	1.00	0.93	2.17	1.85	8.18	4.27	9.14	5.68	4.88	51.17
Basseterre Factory	...	5.14	1.28	1.03	1.22	2.35	1.63	5.82	5.61	7.81	10.72	3.00	50.64
Needsmust	...	6.30	1.45	1.40	1.25	2.45	1.20	5.95	4.45	7.90	8.15	3.85	49.85
Buckleys	...	3.92	1.59	1.20	0.89	2.41	1.71	7.20	4.01	7.73	9.55	4.25	49.18
Mt. Pleasant	...	2.17	6.46	1.94	4.56	2.69	1.60	7.73	5.40	3.30	6.70	3.35	48.30
Hermitage	...	2.73	4.68	1.06	2.68	1.95	1.64	4.81	7.81	7.20	5.11	7.12	47.84
Cunningham	...	3.12	4.63	1.63	1.56	1.94	2.88	4.19	6.45	6.80	5.52	7.56	47.37
Canada	...	3.06	5.07	0.84	0.84	1.59	1.31	6.99	3.45	5.37	7.50	5.95	43.46

APPENDIX 5.—(Cont'd.) AVERAGE RAINFALL 1914—1950.

In 1914 the average rainfall on 31 Stations was 52.92 in.

1915	"	"	32	"	75.59	"
1916	"	"	35	"	69.51	"
1917	"	"	33	"	43.53	"
1918	"	"	30	"	52.44	"
1919	"	"	29	"	62.84	"
1920	"	"	28	"	37.13	"
1921	"	"	29	"	47.09	"
1922	"	"	33	"	44.84	"
1923	"	"	30	"	34.58	"
1924	"	"	28	"	68.13	"
1925	"	"	32	"	43.54	"
1926	"	"	27	"	62.57	"
1927	"	"	29	"	64.36	"
1928	"	"	29	"	53.25	"
1929	"	"	28	"	52.55	"
1930	"	"	31	"	45.98	"
1931	"	"	31	"	57.60	"
1932	"	"	33	"	77.27	"
1933	"	"	36	"	63.97	"
1934	"	"	38	"	55.34	"
1935	"	"	39	"	48.89	"
1936	"	"	38	"	63.12	"
1937	"	"	37	"	44.78	"
1938	"	"	37	"	58.38	"
1939	"	"	37	"	45.69	"
1940	"	"	39	"	54.37	"
1941	"	"	40	"	50.92	"
1942	"	"	41	"	81.53	"
1943	"	"	40	"	66.95	"
1944	"	"	41	"	53.02	"
1945	"	"	41	"	46.74	"
1946	"	"	39	"	37.95	"
1947	"	"	41	"	48.22	"
1948	"	"	40	"	50.24	"
1949	"	"	41	"	62.15	"
1950	"	"	39	"	59.73	"

The mean rainfall for 37 years is 51.60 inches, so that the rainfall for the year 1950 is 5.13 inches above the mean.

MEAN MONTHLY RAINFALL.

	1950	1914—1950
	<i>Inches.</i>	<i>Inches.</i>
January	... 4.71	3.61
February	... 5.36	2.19
March	... 1.89	2.43
April	... 2.15	3.33
May	... 2.94	4.29
June	... 2.66	4.10
July	... 2.71	4.72
August	... 8.67	5.57
September	... 6.46	6.58
October	... 8.49	6.51
November	... 7.35	6.87
December	... 6.34	4.40
Annual Mean	... 59.73	54.60

APPENDIX 6.

Latitude 17° 20' N.

METEOROLOGICAL REPORT FOR 1950.

Heights) Barometer 157 feet.

Longitude 62° 45' W

AGRICULTURAL DEPARTMENT, ST. KITTS.

above M.S.L.) Rain Gauge 152 feet.

Months.	Barometric Pressure, reduced to Sea-Level, 32° Fahrenheit and corrected for gravity.					Temperatures, °F.							Vapour Pressure Ins. of Mercury.				Relative Humidity per cent.		Inches Rainfall.	No. of days on which rain fell.	
	9 a.m.	3 p.m.	Mean.	Highest.	Lowest.	Maximum Means.	Minimum Means.	Maximum Extreme.	Minimum Extreme.	Mean for Month.	Range for Month.	Dew Point 9 a.m.	Dew Point 3 p.m.	9 a.m.	3 p.m.	Mean.	3 p.m.	Mean.			
January	30.095	30.029	30.062	30.186	29.961	78.7	68.8	81	66	73.8	15	66	64	.636	.606	.621	66.5	67.9	67.2	6.12	19
February	30.058	29.994	30.026	30.126	29.939	79.8	70.3	85	68	75.1	17	67	68	.674	.695	.685	74.8	71.2	73.0	5.28	15
March	30.095	30.017	30.056	30.171	29.956	81.1	70.9	82	69	76.0	13	67	66	.662	.654	.658	70.4	65.2	67.8	1.60	15
April	30.041	29.985	30.013	30.118	29.929	81.9	71.2	84	67	76.6	17	67	67	.674	.665	.670	70.4	66.6	68.5	1.24	9
May	30.027	29.975	30.001	30.120	29.918	83.5	73.1	87	70	78.3	17	68	68	.686	.701	.694	66.9	65.5	66.2	0.86	6
June	30.050	29.966	30.008	30.092	29.958	84.7	76.1	86	72	80.4	18	72	72	.792	.777	.785	70.3	70.6	70.5	2.48	7
July	30.065	30.026	30.045	30.110	29.942	86.4	76.1	89	73	81.3	16	72	72	.786	.795	.791	68.5	66.8	67.6	2.03	18
August	29.959	29.920	29.939	30.077	29.784	86.1	75.3	89	70	80.7	19	74	74	.831	.843	.837	72.7	73.5	73.1	8.27	14
September	29.989	29.933	29.964	30.090	29.490	85.9	75.0	87	72	80.5	15	74	74	.843	.840	.842	74.2	71.6	72.9	3.74	13
October	29.952	29.879	29.916	30.071	29.788	85.1	74.7	89	71	79.9	18	73	75	.801	.863	.832	73.3	73.0	73.2	9.61	18
November	29.920	29.825	29.873	30.065	29.730	83.8	74.1	87	71	79.0	16	71	71	.777	.780	.779	76.7	66.9	71.8	7.55	10
December	29.990	29.924	29.957	30.040	29.865	81.5	72.3	85	70	76.9	15	69	69	.716	.713	.715	73.8	72.3	73.1	4.11	8
Means	30.020	29.956	29.988	—	—	83.2	73.2	85.9	69.9	78.2	15.3	70.0	70.0	.740	.744	.742	71.5	69.3	70.4	52.89	152

REMARKS:—Highest Maximum Temperature ... 89° F on 26th July, 3rd, 11th, & 13th August.

Lowest Minimum " ... 66° F on 7th January.

Highest Barometer (corr.) ... 30.186 on 11th January.

Lowest Barometer " ... 29.490 on 1st Sept. (Hurricane passed North of the island on 31st Aug.—1st Sept.)

Greatest Rainfall in 24 hours ... 3.95 inches on 1st November.

PART V.

ST. KITTS, NEVIS AND ANGUILLA
Veterinary Department.

Annual Report for 1950.

ST. KITTS, NEVIS AND ANGUILLA.
VETERINARY DEPARTMENT.

Annual Report for 1950.

During the year there was an absence of any serious contagious or infectious diseases. Severe losses amongst small stock occurred however, only in Nevis, due to malnutrition with probably a mineral and/or vitamin deficiency.

Parasitic Gastro-enteritis still appears as the major source of loss amongst small stock. Great improvement however has been made in these areas, by the routine dosing with phenothiazine.

The outbreak of Anthrax which occurred in Nevis and St. Kitts during 1948, has not been followed by any further cases.

The Livestock industry in Anguilla after serious losses during the hurricane is recuperating well. A system of small stud centres using animals loaned by Government has been instituted in an effort to improve type of small stock intended for the export trade.

There were a relatively large number of cases of Mastitis amongst dairy herd at Bayfords during the year.

A large number of livestock were imported during the year. These included, on the recommendation of the Agricultural Adviser to the Secretary of State, a nucleus jersey herd which was imported from Jamaica. Some of these animals were purchased by estates and the remainder by the Government farm, where it is intended to raise a small jersey dairy herd.

The department has during the year investigated numerous suspected outbreaks of disease in all classes of livestock. Most of these investigations revealed the conditions encountered to be due to faulty diet, malnutrition and internal parasites. Advice is given as far as possible to counteract these conditions.

Routine supervision of meat inspection and the examination of animals prior to importation and exportation continued during the year. Other routine duties included the issue of slaughter permits, permits for exportation of hides, clinical cases, and the maintenance of the laboratory diagnostic service.

CENSUS FIGURES (1946).

<i>Island</i>	<i>Cattle</i>	<i>Horses</i>	<i>Mules</i>	<i>Donkeys</i>	<i>Swine</i>	<i>Sheep</i>	<i>Goats</i>	<i>Poultry</i>
St. Kitts	3,175	301	373	613	1,003	670	392	5,518
Nevis	2,406	371	130	1,048	1,829	3,548	2,251	9,886
Anguilla	813	10	2	118	823	2,752	1,463	4,096
<i>Presidential</i>								
<i>Total</i>	6,394	682	505	1,779	3,655	6,970	4,206	19,500

DISEASE CONTROL.

In addition to cases attended to as a routine measure, the following diseases were subject to special attention:

<i>Disease.</i>	<i>Animals affected.</i>
Mastitis	... Dairy Cows
Parasitic Gastro-enteritis	... Sheep and goats
Coccidiosis	... Calves
Hookworm	... Dogs
Mineral Deficiency	... Sheep and goats
Anthrax	... Sheep and goats
Fowl Paralysis	... Poultry

MASTITIS: A relatively large number of cases of Mastitis occurred among dairy cattle at Bayfords and milch-goats throughout the island. At Bayfords milk samples taken were examined by direct smear from centrifuge deposits and stained with Newman's stain. Other samples were incubated and plated. In both cases the aetiological factor was mainly Streptococci, while in a few cases coliform organisms appeared to be responsible. It is felt that the use of the milking machine may be in some degree responsible for the increase in the number of cases of this disease at Bayfords during the year. Cases of Streptococcal Mastitis reacted favourably to Penicillin Therapy.

PARASITIC GASTRO-ENTERITIS: This disease continued to take a heavy toll of sheep and goat flocks, particularly in Nevis. The disease is particularly severe during the dry months, when coupled with malnutrition and poor grazing, heavy losses are experienced. There is no doubt that gross over-stocking in Nevis and lack of sufficient grazing are largely responsible for these losses. Stock owners are encouraged to dose regularly with Phenothiazine, and most of the more progressive people have given it as a trial and are satisfied with the result. It is however hoped that dosing is not left until flocks are in an extremely debilitated condition and losses are already occurring, as is often the case.

COCCIDIOSIS: This disease is found fairly frequently in calves and in goats by faecal examination. Usually the cases recur from time to time in the same localities or on the same properties, where apparently the disease is established. Sulphamezathine and Sulphadiazine give fairly good results, and Mephazine has been used and is being given a trial.

HOOKWORM: The incidence of Hookworm in dogs still remains very high and there is no doubt that this disease will remain a serious menace to the health of pets, until active steps are taken by Government to reduce the number of stray and ownerless dogs which act as scavengers around the town and Public Markets. Treatment with Hexylresorcinol has proved extremely effective and very safe.

MINERAL DEFICIENCY: There was evidence during the year, particularly on one estate in Nevis of what appeared to be a serious mineral deficiency. Symptoms included inco-ordination, staggerings, torticollis. Post-mortem examinations revealed no microscopical lesions and blood slides revealed no organisms. Animals reacted favourably to green fodder and mineral mixtures.

ANTHRAX: The outbreak of Anthrax which occurred in Nevis and St. Kitts during 1948 has not been followed by any further cases. The staff of the Veterinary Department is being increased by addition of 2 Stock Inspectors next year, and it is hoped shortly to start a free yearly immunisation service in Nevis against this disease.

FOWL PARALYSIS: Only 1 case of Fowl Paralysis was seen during the year, and that at Bayfords. The animal was destroyed and no further cases occurred.

RABIES: The danger of Rabies being introduced into the island from countries where this disease exists (U.S.A. and American territories in the Caribbean) and lately increased by the rapidity of transportation by air is a matter of great concern. There are few countries in the world which are known to be entirely free from this disease, and it is imperative that every precaution should be taken to prevent its introduction.

During June there was an outbreak of Rabies in three different localities in Puerto Rico. As traffic between Puerto Rico and the American and British Virgin Islands is both rapid and frequent, the danger of introducing this disease southward to the Leeward Islands is very real. Legislation was passed prohibiting the importation of all animals from these areas.

A Caribbean Rabies Conference was held at Jamaica during August and was attended by medical and veterinary officers, the Officer in Charge of the American Diseases Division of the Pan American Sanitary Bureau, the Officer in Charge of Rabies Control in the States of New York and representatives of the United States Army, Federal Public Health Services, and an expert from the Rabies Research Laboratories of the U.S.A.

The deliberations of the Conference was confined to matters concerning the control of Rabies in the Island Territories of the Caribbean, under

the general headings of diagnosis, reporting, control, and inter-territorial reporting, and exchange of information. Under these headings, the Rabies Conference made eleven recommendations to insular Governments and it is sincerely hoped that this and other Governments in the Caribbean will act upon these recommendations.

TUBERCULOSIS SURVEY: In order to ascertain the true position with regard to bovine tuberculosis within the Presidency, a tuberculosis survey was started late in the year. Depending on the result of this survey it is hoped that Government will adopt a policy towards the eradication of this disease, especially in view of the fact that it has such an important bearing on Public Health.

Areas chosen for tuberculin tests are representative of average conditions and include both draft and dairy type animals.

The last survey was carried out in 1944 and it was found that the incidence of the disease was high—nearly 7.3 % of animals tested.

The survey was commenced in December and during this month 14 animals were tested with 1 reactor. The intradermal tuberculin test was used and readings were made at the seventy second hour. It is hoped that the survey will be completed early in 1951, and Nevis and Anguilla during the latter half of the year.

VETERINARY LEGISLATION.

There is no quarantine station in the Leeward Islands Colony, and it is therefore felt that the main effort directed against the importation of diseases into the Presidency, should be by limiting the importation of animals originating from areas where diseases hitherto unknown in the island exist. Disease control therefore largely rests with the implementation of veterinary legislation. During the year the following Statutory Rules and Orders dealing with veterinary legislation came into force.

S.R. & O. No. 3 of 1950. The landing of Animals Prohibition (Revocation) Order.

S.R. & O. No. 8 of 1950. Deals with the conditions under which certain types of animals may be imported from Barbados and Jamaica and also prohibits the landing of horses, mules, asses, dogs and cats from the United States of America and Canada.

The regulation aims at preventing the introduction of Trichomoniasis and Brucella infection in cattle from Jamaica and Barbados, and Equine Encephalomyelitis and Rabies from the U.S.A. and Canada.

S. R. & O. No. 9 of 1950. Prohibits the landing of animals originating in or routed *via* Puerto Rico, the Dominican Republic, Haiti and the British and American Virgin Islands.

This order was made following an outbreak of Rabies in Puerto Rico during the year.

SCHEDULED DISEASES.

The following Scheduled Diseases were reported to the Caribbean Commission as occurring in the Leeward Islands during 1950:

<i>Disease.</i>	<i>Number of cases.</i>
Distemper	1
Epizootic Lymphangitis	5
Ulcerative Lymphangitis	2
Piroplasmosis (bovine)	2
Pullorum infection	2
Tuberculosis % Reactors	0.5

The Secretariat of the Caribbean Commission is empowered to collect and disseminate information concerning outbreaks of Scheduled Diseases in all Caribbean countries and territories adjacent to the Caribbean. It takes the form of a monthly return indicating the territories affected and the nature and extent of the diseases involved.

LIVESTOCK IMPROVEMENT.

1. ST. KITTS: At Bayfords Dairy Farm 18 cows and 13 heifers calved during the year, giving a total of 32 calves. Of these 14 were bulls and 18 heifers.

The total herd on the 31st December numbered 107 head, and consisted of bulls and bull-calves, 24; cows 33; heifers, 50

During the middle of September, 10 grade Jersey (1 bull and 9 heifers) were imported by air from Jamaica. It is planned to form a nucleus Jersey herd with these animals for comparison with the present Holstein herd, which has been bred at Bayfords for some years.

Stud services for the Holstein and Jersey bulls during the year totalled 68.

The scheme for Artificial Insemination remained in abeyance during the year owing to the difficulty in obtaining direct shipment of semen from Jamaica to St. Kitts.

2. ANGUILLA: As a result of recommendations put forward by the Veterinary Officer to Government, the following scheme was inaugurated, whereby a small flock of grade sheep and goats were imported and are being kept at the Valley Station as a breeding herd, and is intended to be used as follows:

1. The progeny of this herd will be sold locally at a nominal figure for breeding purposes.

2. A system "animals on loan" is adopted for areas other than the Valley in Anguilla as follows:

Instead of having stud centres at various points of the island, responsible stock raisers are given on loan Government owned animals for their own use and for the use of neighbouring stock owners. Such persons would collect a standard stud fee from people using the animal which he retains himself, this sum going towards the cost of maintaining the stud animals loaned to him by Government. Periodic inspections are made to see that the animals are well cared for, and Government has the right to remove such animals at any time, if the privilege of keeping these animals is abused in any way. The unit given on loan consists of 1 grade Holstein bull, 2 grade ram goats (Anglo-nubian and/or British Alpine), and ram-sheep (Black-head or Black-belly).

IMPORTATION OF ANIMALS.

The following animals were imported during the year. Total 61 head.

Country of Origin	Horses	Cattle	Sheep	Goats	Poultry	Swine
Trinidad	—	—	—	1	—	—
Antigua	—	5	9	—	5	1
Jamaica	—	20	—	—	—	—
U. K.	—	1	—	3	7	—
Dutch West Indies	—	1	—	—	—	—
Barbados	4	—	4	—	—	—

EXPORTATION OF ANIMALS.

The following animals were exported during the year. Total 1,766 head.

Destination	Cattle	Horses	Goats	Sheep	Poultry	Dogs	Cats	Mules	Donkeys	Swine
Trinidad	—	10	—	—	2	—	—	15	32	—
Antigua	—	—	—	—	4	5	1	—	—	—
Dutch West Indies	46	—	561	876	—	1	—	—	7	2
Barbados	—	42	—	—	1	1	—	104	34	—
Dominica	—	—	—	2	13	—	—	—	—	—
Montserrat	—	—	—	—	—	1	—	—	—	—

GOVERNMENT VETERINARY SERVICE.

(COLONIAL DEVELOPMENT AND WELFARE SCHEME D.1103).

The above Scheme was approved by the Secretary of State with free grant of £1,287 early in 1949. A supplementary grant of £13

subsequently authorised by the Secretary of State in March 1950, under Scheme D. 1103A to cover cost of living allowances payable to the Veterinary Officer and his clerk. The Scheme commenced on the 1st April, 1949, and terminated on 31st December, 1950.

The detailed annual expenditure as set out in the Secretary of State's approval is £1,443. A contribution of £740 per annum is made from local funds, therefore Colonial Development and Welfare expenditure amounts to £703.

The entire cost of maintaining a revised Presidential Veterinary Service (St. Kitts, Nevis and Anguilla), will be met from Presidential funds as from 1st January, 1951, and provision has been made in the draft Estimates for 1951, and approved by the Finance Committee of the Legislative Council for the necessary expenditure.

The department is being removed into the new office provided for it at La Guerite on 1st April, 1951 and provision in the draft Estimates provides for a well equipped laboratory, and the inclusion of two new posts, those of Stock Inspectors. It is considered that, given the assistance of these two officers, both diagnostic and therapeutic work can be greatly extended and carried further than the limited field of activity during the past few years. The duties to be assigned to these officers is summed up as follows:—

1. Instruction and help in Animal Husbandry methods and care of animals in country districts.
2. Simple treatment and first aid for peasant stock.
3. They will be normally stationed in rural districts and will have a good opportunity to gather information of cases of disease and outbreaks usually not reported to the Veterinary Officer.
4. They will assist in disease campaigns, vaccinations and investigational work, which previously it has not been possible to carry out, viz: Anthrax, Tuberculosis, Tick Fevers and Tick Eradication.

CLINIC AND LABORATORY: A diagnostic service was maintained during the year and included post mortems, milk, blood and faecal examinations. Numerous clinical cases were attended to, both at the surgery and in the field.

RETURN OF ANIMALS SLAUGHTERED AT THE PUBLIC MARKETS.

	Basseterre	Sandy Point	Charles-town	Ginger-land	Totals
Cows	156	15	23	24	218
Bulls	152	26	81	41	300
Steers	99	—	11	—	110
Heifers	20	—	23	—	43
Sheep	1,387	48	349	352	2,136
Goats	793	64	392	364	1,613
Pigs	323	87	146	197	753
Totals	2,930	240	1,025	978	5,173

SLAUGHTERINGS IN NEVIS.

	Cattle	Sheep	Goats	Swine	Totals
1945	153	1,008	1,007	688	2,856
1946	165	1,269	1,478	818	3,730
1947	166	1,241	1,101	785	3,293
1948	197	1,048	1,432	652	3,329
1949	230	898	1,234	474	2,836
1950	203	701	756	343	2,003

COMPARATIVE SLAUGHTERINGS, BASSETERRE.

	Cattle	Sheep	Swine	Goats
1942	600	1,448	990	976
1943	438	1,417	612	621
1944	502	2,253	870	948
1945	608	2,086	1,165	860
1946	567	1,988	1,087	878
1947	541	3,067	737	1,700
1948	745	1,905	607	1,236
1949	690	1,640	334	1,081
1950	427	1,387	323	793

CONDEMNATIONS, BASSETERRE, 1950.

	Intestines	Liver	Lungs	Kidneys
Cattle	—	7	2	2
Sheep	417	102	—	—
Goats	51	25	3	—
Pigs	30	85	18	106

VISITORS. Visitors to the Presidency during the year included the Agricultural Adviser to the Secretary of State for the Colonies, the Agricultural Adviser to C. D. & W., the Director of Agriculture and the Senior Veterinary Officer.

VISITS: Frequent visits were made to Nevis and Anguilla during the year. The Veterinary Officer was absent from the Colony on vacation leave in the United Kingdom from 29th June, to 22nd October. Dr. Jardine acted during his absence.

A. W. VAUGHAN, M.R.C.V.S., F.R.E.S.

Government Veterinary Officer.

